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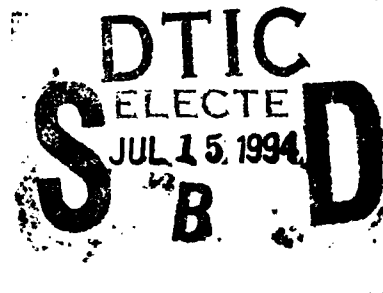


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**Community Environmental Response
Facilitation Act (CERFA) Report**

**Nike Battery Kansas City 30
Pleasant Hill, Missouri**



Prepared for:

**U.S. ARMY ENVIRONMENTAL CENTER
ABERDEEN PROVING GROUND, MARYLAND 21010**

Prepared by:

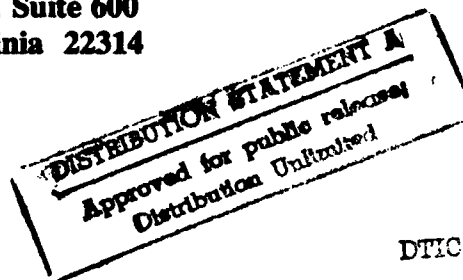
**THE EARTH TECHNOLOGY CORPORATION
1420 King Street, Suite 600
Alexandria, Virginia 22314**

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Aberdeen Proving Ground, Maryland 21010*

April 1994

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LIST OF ACRONYMS AND ABBREVIATIONS

BRAC	Base Realignment and Closure
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERFA	Community Environmental Response Facilitation Act
ERIIS	Environmental Risk Information and Imaging Services
PA	Preliminary Assessment
PCB	Polychlorinated Biphenyls
POL	Petroleum, Oil, and Lubricants
RCRA	Resource Conservation and Recovery Act
TETC	The Earth Technology Corporation
TPH	Total Petroleum Hydrocarbon
USAEC	U.S. Army Environmental Center
USATHAMA	U.S. Army Toxic and Hazardous Material Agency
USEPA	U.S. Environmental Protection Agency

EXECUTIVE SUMMARY

This report presents the results of the Community Environmental Response Facilitation Act (CERFA) investigation conducted by The Earth Technology Corporation (TETC) at Nike Battery Kansas City 30, a U.S. Government property selected for closure by the Base Realignment and Closure (BRAC) Commission under Public Laws 100-526 and 101-510. Under CERFA (Public Law 102-426), Federal agencies are required to identify real property that can be immediately reused and redeveloped. Satisfying this objective requires the identification of real property where no hazardous substances or petroleum products, regulated by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), were stored for one year or more, known to have been released, or disposed.

Nike Battery Kansas City 30 is a 20-acre site (more or less) located in Cass County, Missouri, approximately 35 miles southeast of Kansas City, Kansas. The installation served as a Nike Battery Control Area and later was used by the Missouri National Guard for training activities. The installation is inactive at the present time. Activities associated with the property that have environmental significance were vehicle maintenance; storage of paints, solvents, batteries, and fuels; small arms firing practice; and ammunition storage.

TETC reviewed existing investigation documents; U.S. Environmental Protection Agency (USEPA), State, and county regulatory records; environmental data bases; and title documents pertaining to Nike Battery Kansas City 30 during this investigation. In addition, TETC conducted interviews and visual inspections of the site as well as inspections and data base searches for the surrounding properties.

Information in this CERFA Report was current as of April 1994. This information was used to divide the installation into four categories of parcels: CERFA Parcels, CERFA Parcels with Qualifiers, CERFA Disqualified Parcels, and CERFA-Excluded Parcels, as defined by the Army.

The total BRAC property acreage at Nike Battery Kansas City 30 is 20 acres. Areas of the facility that have no history of CERCLA-regulated hazardous substance or petroleum product release, disposal, or storage are categorized as CERFA Parcels. TETC determined that approximately 9 acres of the 20 acre property fall within the CERFA Parcel category, predominantly in the west part of the facility.

Areas of the facility that had no evidence of such release, disposal, or storage, but contained hazards not regulated by CERCLA (such as asbestos, radon gas, lead-based paint, unexploded ordnance, radionuclides, or not in-use equipment containing polychlorinated biphenyl) were categorized as CERFA Parcels with Qualifiers. No portions of the facility were identified as CERFA Parcels with Qualifiers.

Areas of the facility for which there is a history of release, disposal, or storage for one year or more of CERCLA-regulated hazardous substances or petroleum products or had a release of hazards identified above were categorized as CERFA Disqualified Parcels. Eleven (11) acres of installation property are identified as CERFA Disqualified Parcels.

Areas on the facility that will be retained by the Federal Government or that have already been transferred by deed are categorized as CERFA-Excluded Parcels. None of the property was identified as CERFA-Excluded Parcels.

The primary objective of CERFA is satisfied by the identification of CERFA Parcels and CERFA Parcels with Qualifiers. As a result, concurrence has been sought from the regulatory agencies on these two categories of parcels. This CERFA Report has been reviewed by the U.S. Army Environmental Center (USAEC), Nike Battery Kansas City 30, Region VII USEPA, and the State of Missouri Department of Natural Resources. Comments from these organizations have been incorporated into this final report. Any unresolved issues from the regulatory agencies are identified.

This report contains maps that summarize the categorization of Nike Battery Kansas City 30 on the basis of the above definitions. This Executive Summary should be read only in conjunction with the complete CERFA Report for this installation. The CERFA Report provides the relevant environmental history to substantiate the parcel categorization. This report does not address other property transfer requirements that may be applicable under the National Environmental Policy Act, nor does it address natural resource considerations such as the threat to plant or animal life.

1.0 INTRODUCTION

This Community Environmental Response Facilitation Act (CERFA) Report for Nike Battery Kansas City 30 was prepared by The Earth Technology Corporation (TETC) under Contract No. DAAA15-91-0009, Delivery Order 0010, for the U.S. Army Environmental Center (USAEC), Base Closure Division. The purpose and scope of the work are presented in this section. The sources used to conduct the investigations for the CERFA Report are identified in Section 2. Background information for the Nike Battery Kansas City 30 is provided in Section 3. CERFA investigation results are discussed in Section 4. Finally, Section 5 includes maps that provide Nike Battery Kansas City 30 boundaries, land transfers, and delineate the parcels of the facility according to CERFA Parcel identification requirements.

1.1 PURPOSE AND SCOPE

Public Laws 100-526 and 101-510 designated more than 100 Army facilities for closure and realignment. As a result, it became necessary to expedite the environmental investigation and cleanup process prior to the release and reuse of Army Base Realignment and Closure (BRAC) property. The BRAC environmental restoration program was established with the first round of base closures (BRAC 88) and continued with subsequent rounds (BRAC 91, BRAC 93, etc.). The BRAC program is similar to the Army's Installation Restoration Program, but it has been expanded to include such categories of contamination as asbestos, radon, polychlorinated biphenyls (PCBs), and others that are not normally addressed under the Installation Restoration Program.

The first step in the BRAC environmental restoration program was the preparation of Enhanced Preliminary Assessments (PAs). The term "enhanced" is used to distinguish these assessments from previous Installation Restoration Program PAs: The BRAC PAs are conducted from a property transfer perspective and evaluate substances (e.g., asbestos, radon, PCBs) that are not included in the previous PAs. The Enhanced PAs include reviews of existing installation documents, regulatory records, and aerial photographs; a site visit and visual inspection; and employee interviews. Enhanced PAs were conducted for BRAC 88 and BRAC 91 installations and are currently underway at BRAC 93 installations. An Enhanced PA was prepared for Nike Battery Kansas City 30 in December 1989 by Roy F. Weston, Inc., under the direction of USAEC (formerly the U.S. Army Toxic and Hazardous Material Agency [USATHAMA]).

In October 1992, Public Law 102-426, CERFA, amended Section 120(h) of Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and established new requirements for contamination assessment and regulatory agency notification/concurrence for Federal facility closures. CERFA requires the Federal Government to identify property where no CERCLA-regulated hazardous substances or petroleum products were stored, released, or disposed before ending activities on real property owned. The Government's assessment of a facility as uncontaminated must be concurred with by the appropriate regulatory agencies (U.S. Environmental Protection Agency on National Priorities List bases and the State on non-National Priorities List bases). These requirements retroactively affect the Army BRAC 88 and BRAC

91 environmental restoration activities and are being implemented at BRAC 93 sites concurrently with their Enhanced PAs. The primary objective of the CERFA is that Federal agencies expeditiously identify real property that can be rapidly reused and redeveloped. CERFA does not mandate that the Army transfer real property so identified.

TETC was awarded the task to identify real property where no CERCLA-regulated hazardous substances or petroleum products were stored, released, or disposed at 12 BRAC 88 sites. This report presents the findings of this CERFA response for Nike Battery Kansas City 30, Missouri.

1.2 DEFINITION OF TERMS

The following definitions are used to categorize and label parcels identified on the installation:

- ★ CERFA Parcel -- A portion of the installation real property for which investigation reveals no evidence of storage for one year or more, release, or disposal of CERCLA hazardous substances, petroleum, or petroleum derivatives and no evidence of being threatened by migration of such substances. CERFA Parcels include areas where PCB containing equipment is in operation, but there is no evidence of release. CERFA Parcels also include any portion of the installation which once contained related environmental, hazard, or safety issues including unexploded ordnance (UXO) located on firing ranges or impact areas, radon, stored (not in-use) PCB-containing equipment, asbestos contained within building materials, and lead-based paint applied to building material surfaces, but which have since been fully remediated or removed.
- ★ CERFA Parcel with Qualifier(s) -- A portion of the installation real property for which investigation reveals no evidence of storage for one year or more, release, or disposal of CERCLA hazardous substances, petroleum, or petroleum derivatives and no evidence of being threatened by migration of such substances. Parcel does, however, contain related environmental, hazard, or safety issues including unexploded ordnance (UXO) located on firing ranges or impact areas, radon, radionuclides contained within products being used for their intended purposes, asbestos contained within building materials, lead-based paint applied to building material surfaces, or stored (not in-use) PCB containing equipment.
- ★ CERFA Disqualified Parcel -- A portion of the installation real property for which investigation reveals evidence of a release, disposal, or storage for more than one year of a CERCLA hazardous substance, petroleum, or petroleum derivatives; or a portion of the installation threatened by such a release or disposal. CERFA Disqualified Parcels also include any portion of the installation where PCB, asbestos containing material, lead-based paint residue, or any ordnance has been disposed of, and any locations where chemical ordnance has been stored. Additionally, CERFA Disqualified Parcels include any areas in which CERCLA hazardous substances or petroleum products have been released or disposed of and subsequently fully remediated.

- ★ CERFA-Excluded Parcel -- A portion of the installation real property retained by the Department of Defense, and therefore not explicitly investigated for CERFA. CERFA-Excluded Parcels also include any portions of the installation which have already been transferred by deed to a party outside the Federal Government, or by transfer assembly to another Federal agency.

The following labels are used in conjunction with the identified parcels:

- ★ P = CERFA Parcel
- ★ Q = CERFA Parcel with Qualifier(s)
- ★ D = CERFA Disqualified Parcel
- ★ E = CERFA-Excluded Parcel

Each parcel has been given a unique number to which the appropriate labels are attached. For example, 4P indicates that the fourth parcel is in the CERFA Parcel category.

The presence of hazards not regulated by CERCLA places a parcel in the CERFA Parcel with Qualifier category. This is indicated by the following labels:

- ★ A = Asbestos
- ★ L = Lead-based Paint
- ★ P = PCB
- ★ R = Radon
- ★ X = Unexploded Ordnance
- ★ RD = Radionuclides

For example, the designation 5Q-L indicates that the fifth parcel is in the CERFA Parcel with Qualifiers category because of the presence of lead-based paint. Similarly, parcel label 8Q-X/R indicates that the 8th parcel is in the CERFA Parcel with Qualifiers category because of the presence of unexploded ordnance and radon.

The following designations are used to indicate the type of contamination or storage present in a parcel that has been placed in the CERFA Disqualified category:

- ★ PR = Petroleum Release
- ★ PS = Petroleum Storage
- ★ HR = Hazardous Substance Release
- ★ HS = Hazardous Substance Storage

For example, 12D-HR indicates that the twelfth parcel is in the CERFA Disqualified category because of evidence of hazardous substance release.

For all parcels, "(P)" is used to indicate that the presence of a contaminant is possible, but that data are unavailable for verification. For example, 9Q-A(P) indicates that the ninth parcel is in the CERFA Parcel with Qualifiers category because of the possible presence (unverified) of asbestos-containing material. Similarly, parcel label 15D-HR/PS/A(P) indicates that the 15th

parcel is classified as a CERFA Disqualified Parcel on the basis of evidence of a hazardous substance release and petroleum storage. It may also have asbestos-containing material.

1.3 GEOGRAPHICAL AND ENVIRONMENTAL SETTING

The Nike Battery Kansas City 30 facility, a subinstallation of Fort Leavenworth, Kansas, is located 35 miles southeast of Kansas City, 2.5 miles south of Lone Jack, and 6 miles east of Pleasant Hill in Cass County, Missouri. A map of the facility location is provided as Figure 1-1.

1.3.1 Physical Setting

The BRAC property that is the subject of this report (hereafter identified as the BRAC property) consists of two Army-owned parcels that have a combined size of approximately 20 acres. The first parcel (hereafter denoted the west parcel) is the most developed portion of the facility. It consists of 10 principal buildings, as well as several small storage structures, and pads and towers on which radar and tracking equipment was mounted. The second parcel (hereafter denoted the east parcel) includes water supply and treatment facilities in its southern area and a sewage treatment plant in its northern portion. The central portion of this parcel is undeveloped. Utility and road easements join the two parcels.

The area around the installation is primarily farmland. The property is bounded by cultivated and uncultivated farmland to the north and south, cultivated farmland to the west, and Highway KK to the east. Cultivated farmland lies between the two facility parcels. Several residences are located on the east side of Highway KK. Access to the west parcel is provided by Control Area Drive, a driveway that runs from Highway KK west to the west parcel gate. Access to the east parcel is provided by gates at the water treatment facilities and at the sewage treatment plant.

The Nike Battery Kansas City 30 facility is situated within relatively flat farmland, with relief across the property of less than 50 feet. The slope is generally toward the northeast. Elevations over the property range from a high of 1,010 feet above mean sea level in the southwest portion of the west parcel to a low of 960 feet above mean sea level in the northeast portion of the east parcel.

The west parcel is fully developed and consists primarily of grass-covered areas, concrete sidewalks, asphalt parking areas, buildings, and structures. The east parcel is not fully developed. Areas around the water treatment and sewage treatment plant are maintained and grass covered; the remainder consists of undeveloped primary and secondary growth deciduous woodland.

1.3.2 Surface Water

Surface water drainage across the facility is generally to the northeast. In the west parcel, surface water runoff from the area west and southwest of the main buildings (including an athletic court and some radar facilities) drains to a culvert. This culvert passes under the parcel fence to a ravine that drains to the northeast. Surface drainage from the area of the main buildings is by a system of storm drains that empties into a small basin located south of the Maintenance Shop (Building S3012). The basin then drains through a pipe under the northeast corner of the driveway to a surface drainage trench. Surface water from the balance of the radar area and the area east of the main installation buildings drains to the northeast through a trench located along the eastern fenced border of the parcel. All of the surface drainage appear to eventually flow to a perennial creek located approximately 0.25 miles north of the northern fence of the facility. The unnamed perennial creek flows east and passes beneath State Highway KK immediately north of the east parcel. The unnamed creek flows east to the east branch of Crawford Creek, which joins the west branch of the creek southeast of the town of Strasburg, approximately 4 miles south of the Nike Battery Kansas City 30 facility.

Drainage from the west parcel is also generally northeasterly. Surface water runoff flows via sheet flow to minor drainages and a roadside swale along Highway KK to the unnamed perennial creek north of the east parcel. The abandoned sewage treatment plant outfall also discharged into this creek.

1.3.3 Geology and Soils

Bedrock below the Nike Battery Kansas City 30 facility has been mapped as Middle or Upper Pennsylvanian in age. The contact between the Middle Pennsylvanian Marmaton Group and the Upper Pennsylvanian Pleasanton Group is a disconformity that occurs in some locations. In other locations, the uppermost bedrock is composed of limestones of the Kansas City Group. The underlying rock strata dip gently to the northwest without any notable disturbance and from the southeast to the northwest higher formations appear successively. The Pleasanton Group consists primarily of shale and limestone, with sandstones generally marking the contact with the overlying Kansas City Group and disconformity with the underlying Marmaton Group. The Marmaton Group consists of predominantly shale and limestone layers, with occasional coal seams near its contact with the underlying coal-bearing Cherokee Group.

The Nike Battery Kansas City 30 facility area is primarily overlain by the Macksburg-Sampsel-Greenton soil association category, which is found in the Cherokee Prairies region of the State. This association consists of deep, gently sloping and moderately sloping poorly drained soils formed in loess and residuum.

1.3.4 Hydrogeology

There have not been any significant groundwater investigations conducted at the Nike Battery Kansas City 30 facility. Groundwater in the region typically varies from 20 to 100 feet in depth below surface, depending on the season of the year and the local geology. Local faults and variations of the sands, shales, and limestone subsurface can affect local groundwater depth and

hydrogeology. Shallow groundwater flow in the area is likely toward the northeast, following the surface topography.

Typically, water wells are not used for domestic supply in the region, because shallow wells tend to produce little volume [1 to 2 gallons per minute] and water quality is generally poor (e.g., high chloride content). Deep wells, greater than 400 feet in depth, generally produce greater volumes of water, but the water is almost uniformly not of drinking quality due to salt content. Groundwater within the Pleasanton and Marmaton Groups has been classified as "very saline," with estimated well yields of 0 to 20 gallons per minute and 0 to 150 gallons per minute, respectively.

Despite regional groundwater quality, potable supply wells may exist within a 3-mile radius of the Nike Battery Kansas City 30 facility. According to the Enhanced PA, personnel from local water districts, County and State health departments, and the Missouri Department of Natural Resources all indicated that there probably are wells in the area. However, no wells were identified or registered and documented.

2.0 SCOPE OF INVESTIGATION

The scope of this CERFA investigation followed the protocol established in Public Law 102-426 supplemented by Department of Defense Policy on the Implementation of CERFA dated May 19, 1993. This section describes the sources that were used during the CERFA investigation conducted for Nike Battery Kansas City 30. Relevant information available from previous environmental studies are presented. Findings from Federal, State, and local government regulatory records, installation documents, aerial photographs, and personnel interviews are addressed. The inspection methods used during the site survey are identified.

2.1 EXISTING DOCUMENTS

Existing investigation documents and aerial photographs were reviewed to evaluate pertinent information that could be used as part of this CERFA Report. These documents are summarized below and listed in Appendix A, "Reference List for Nike Battery Kansas City 30 Facility." Primary source documents containing CERFA criteria information include the Enhanced PA and the Sampling Design Plan for Environmental Investigation which are summarized in Table 2-1.

2.1.1 Enhanced Preliminary Assessment Report, Nike Battery Kansas City 30 (December 1989)

A congressional action that passed the Defense Authorization Amendments and BRAC prompted USAEC (formerly USATHAMA) to conduct an Enhanced PA to assess the environmental quality of the Nike Battery Kansas City 30 facility. Information contained in the Enhanced PA was obtained through inspection of the facility, review of available information from current property owners, review of related regulatory agency files at the local, State, and Federal levels, and interviews with available current and former personnel associated with the facility.

The Enhanced PA evaluated a number of programmatic and building or area-specific environmentally significant operations at the Nike Battery Kansas City 30 facility. These environmentally significant operations are described by CERFA category area in Table 2-1.

The Enhanced PA report's major conclusions were:

- ★ No conditions observed on the property appeared to present an immediate threat to human health or the environment.
- ★ A number of environmentally significant operation identified through Enhanced PA investigations have the potential to affect human health and environment and represent areas requiring environmental evaluation. Additional investigation, such as sampling of a variety of media including soils, sediments, and groundwater, were recommended for the areas/buildings listed below:

TABLE 2-1
SUMMARY OF ENHANCED PRELIMINARY ASSESSMENT AND SAMPLING DESIGN PLAN
FINDINGS, NIKE BATTERY KANSAS CITY 30

CERFA Category	Enhanced Preliminary Assessment	Sampling Design Plan
Asbestos	Asbestos was identified as a possibility in Buildings S3003, S3004, S3005, and S3006. An asbestos hazard was also identified associated with transite (asbestos) underground water pipe throughout the facility. Asbestos sampling was recommended for buildings and water supply.	Asbestos-containing material sampling methodology for Buildings S3003, S3004, S3005, and S3006 described. Asbestos sampling of drinking water supply identified as not possible because system shut down.
Lead-based paint	Lead-based paint not addressed.	Addressed as an area of concern in buildings that were occupied (Buildings S3003, S3004, S3005, S3006).
Polychlorinated biphenyls	Eighteen Army-owned transformers identified on property. None reported to have been tested. PCB testing recommended for each.	PCB testing methodology for Army-owned transformers described. Three Missouri public utility owned transformers on property identified as PCB free.
Radon	Radon was not addressed.	Radon testing methodology for Buildings S3003, S3004, S3005, and S3006 described.
Unexploded ordnance	Unexploded ordnance not identified at installation.	Unexploded ordnance not identified at installation.
Radionuclides	Radioactive materials not addressed based on past record searches.	Radioactive materials not addressed based on past record searches.
Petroleum release or disposal	Staining noted in association with waste oil disposal area and waste oil storage area. Releases suspected at vehicle wash area, waste antifreeze dump area and sewage treatment plant outfall. Sampling recommended at each location.	Soil sampling methodology described for waste oil storage area, waste oil disposal area, sewage treatment plant outfall, vehicle wash and waste antifreeze areas.
Petroleum storage	Seven underground storage tanks were identified on the property. Leak testing and removal of tanks that fail was recommended. A 500-gallon diesel fuel aboveground storage tank and a waste oil aboveground storage tank at waste oil disposal area identified. Sampling recommended in latter area. POL storage also identified in association with waste oil storage area (POL and waste POL), a storage shed (POL), a former Conex shed (POL), a paint/POL locker (POL), and a storage area adjacent to Building S3012 (POL). Sampling recommended for waste oil storage area.	Underground storage tank leak testing methodology and removal actions for those which fail testing described. Soil sampling for former waste oil aboveground storage tank and waste oil storage area described.

TABLE 2-1
SUMMARY OF ENHANCED PRELIMINARY ASSESSMENT AND SAMPLING DESIGN PLAN
FINDINGS, NIKE BATTERY KANSAS CITY 30

Continued

CERFA Category	Enhanced Preliminary Assessment	Sampling Design Plan
Hazardous substance release or disposal	Hazardous substance release suspected in association with small arms firing range (lead), hazardous waste disposal area (VOCs, metals), vehicle waste area (VOCs, metals), waste antifreeze dump site (VOCs, metals), and sewage treatment plant debris area (asbestos), waste oil storage area (VOCs, metals), and sewage treatment plant outfall (lead from battery room floor drain). Sampling recommended for each location including soil, sediments, and groundwater. PCB soil-testing recommended for ground mounted transformers.	Soil, groundwater, sediment sampling methodologies described for waste oil disposal site, vehicle wash area, and waste oil storage area. Sampling methodology for small arms firing range, and waste sewage treatment plant outfall described. Lead in water supply also identified as a hazard but sampling not possible because system shut down. Soil sampling for PCBs around ground mounted transformer identified as 10G was recommended. Sampling in debris area not recommended.
Hazardous substance storage	Hazardous substance identified in association with a storage shed (paint storage), Building S3006 (battery room and paint storage), and a paint locker (paint storage). Sampling recommended for container of unidentified powder in Building S3004.	Sampling methodology for unidentified material in white bucket described.

Key: CERFA = Community Environmental Response Facilitation Act
PCB = Polychlorinated Biphenyls
POL = Petroleum, Oil, and Lubricants
VOC = Volatile Organic Compound

- Oil disposal area
- Waste oil storage area
- Vehicle wash area and antifreeze disposal area
- Underground storage tanks
- Transformers
- Small arms practice range
- Asbestos in structures
- White powder in bucket (Building S3003)
- Ammo storage vault and unidentified building
- Sewage treatment plant outfall
- Sewage treatment plant debris pile
- Asbestos water pipe.

2.1.2 Installation Assessment, Army Base Closure Program (April 1990)

In 1990, the USEPA conducted an analysis of historical aerial photography of the Nike Battery Kansas City 30 facility. The analysis focused on locating and identifying potential contamination sources within the study area during the period from 1958 to 1989.

Two sites are featured in the assessment: the Nike Battery Kansas City 30 CERFA Parcels and a separate Launch Control Area, where missiles were assembled, serviced, and may have been fired. The aerial photograph analysis identified a number of possible environmentally significant operations on the Nike Battery Kansas City 30 parcels, including several stained areas (waste oil disposal area and waste oil storage areas), a shallow depression, a possible pipeline, several ground scars, a vehicle and equipment storage area, several trenches, and a pit.

2.1.3 Final Sampling Design Plan for Environmental Investigation/Alternative Analysis (July 1990)

A Sampling Design Plan was developed to address methods for the conduct of an Environmental Investigation/Alternative Analysis for the Nike Battery Kansas City 30 facility. The plan includes methodologies and procedures for sampling and analysis of media including groundwater, soil, sediments, surface water, building materials (asbestos and lead-based paint), and radon. Sampling and analysis procedures concentrate on areas requiring environmental evaluations identified in the Enhanced PA. The Sampling Design Plan also identified lead-based paint, lead in the water supply, and radon as areas requiring environmental evaluations at the facility.

Records searches and reviews and a site reconnaissance were conducted for development of the plan. The site visit occurred on February 7, 1990. The final Sampling Design Plan was completed on July 20, 1990. The findings and recommended sampling methods are summarized in Table 2-1.

Initiation of the Environmental Investigation/Alternative Analysis task had been placed on hold by Headquarters, Department of the Army. Currently, Training and Doctrine Command is

reviewing a proposal by the Kansas City District Corps of Engineers to perform limited sampling and remedial actions at the site.

2.1.4 Draft Environmental Assessment for Disposal of the Nike Battery Kansas City 30 (October 1990)

The purpose of the Draft Environmental Assessment was to assess the environmental and economic impacts of installation disposal. Several generalized reuse alternatives for the facility were considered in the assessment. The investigation included pertinent information regarding asbestos, radon, PCB transformers, lead-based paint, underground storage tanks, and waste disposal.

The environmental assessment concluded that the relevant impacts associated with proposed disposal activities would not be significant and that a Finding of No Significant Impact was applicable for the proposed action.

2.2 FEDERAL, STATE, AND LOCAL GOVERNMENT REGULATORY RECORDS

Information regarding permit and compliance status, enforcement actions, and the hazardous waste generator status of Nike Battery Kansas City 30 was obtained through on-site and telephone interviews, an electronic data base search, and record reviews at various Federal, State, and local regulatory agencies.

A record review was conducted at the U.S. Environmental Protection Agency Region VII. Federal and Army records made available by USAEC and Nike Battery Kansas City 30 were also reviewed.

An electronic data base search of Federal and State records resulted in a Federal/State Data Report and Map containing information from the following data bases:

- ★ National Priorities List
- ★ Comprehensive Environmental Response Compensation, and Liability Information System
- ★ Toxic Release Inventory
- ★ Resource Conservation and Recovery Information System Treatment and Storage Facility
- ★ Resource Conservation and Recovery Information System Large Quantity Generators
- ★ Resource Conservation and Recovery Information System Small Quantity Generators
- ★ Civil Enforcement Docket
- ★ Emergency Response Notifications System
- ★ Facility Index System
- ★ Open Dump System
- ★ Underground Storage Tanks
- ★ Leaking Underground Storage Tanks

- ★ Solid Waste Information System
- ★ Hazardous Waste Information System.

The search encompassed the properties within a 1-mile radius from the center of the installation. A copy of the data base search results are included in Appendix B. A summary of relevant regulatory information obtained during the record review process is presented below.

2.2.1 Permits and Permit Applications

The permit status of Nike Battery Kansas City 30 is summarized below from information obtained through prior environmental document reviews, Federal and State record searches, installation record searches, and interviews with installation personnel. However, the installation point of contact provided the following information during the CERFA site visit.

Notification of Hazardous Waste Activity: On July 27, 1992, Fort Leavenworth, Directorate of Public Works submitted a notification of hazardous waste activity and USEPA Resource Conservation and Recovery Act (RCRA) generator identification number request to the State of Missouri Department of Natural Resources. The submission was made to provide for the proper manifesting of hazardous waste that could potentially be generated at the site through ongoing site cleanup activities.

Hazardous waste anticipated to be generated at the facility included waste gasoline and diesel fuel sludge from underground storage tanks, PCB transformers, asbestos, and some metals-contaminated soil from a motor oil dumping area.

On September 30, 1992, the Nike Battery Kansas City 30 facility was issued Missouri Generator ID No. 021397 and USEPA ID No. MO4210090086.

Notification of PCB Activity: On July 20, 1992, the Fort Leavenworth Directorate of Public Works submitted a notification of PCB activity (USEPA Form 7710-53) to the USEPA Office of Toxic Substances Chemical Regulation Branch. The notification requested that the installation be granted use of Nike Battery Kansas City 30's USEPA RCRA Generator ID No. for manifesting of PCB transformers to be removed from the site.

USEPA responded on November 23, 1992, indicating acceptance of the request and authorizing the PCB activity under the Nike Battery Kansas City 30 RCRA Generator ID.

2.2.2 Inspection Reports and Enforcement Actions

The only inspection report type documentation for the Nike Battery Kansas City 30 facility identified during the CERFA record reviews at the USEPA Region VII office was a Potential Hazardous Waste Site Identification dated June 25, 1990. The identification indicated the following past activities at the facility:

- ★ Disposal of waste oil
- ★ Piping containing asbestos

- ★ Underground storage tanks without leak tests
- ★ Eighteen (18) transformers with possible PCBs
- ★ Possible lead solder in water piping.

There was no evidence indicating the identification was a result of an actual on-site inspection; rather, it appeared the identification was a result of review of the Enhanced PA.

2.3 INTERVIEWS

TETC conducted a site visit at Nike Battery Kansas City 30 on October 25, 1993, to collect information and interview individuals associated with the installation. TETC's team included Kurt Rausch.

Individuals interviewed at the installation included Russell Fendick, Richard Wilms, Mel Standford, Linda Norris, Richard Thomas, Dianna Newman, and James Harris. In addition, Kurt Rausch of the TETC visited USEPA Region VII in Missouri, to obtain information not available at the installation. A complete list of the agencies visited or contacted is provided in Table 2-2.

2.4 VISUAL INSPECTIONS

During the site visit, inspections were conducted throughout the facility and at adjacent properties. The purpose was to confirm findings reported in previous studies and information collected through interviews, as well as to identify new areas of concern. The visual inspection consisted of automobile drive-through and walk-through surveys of areas in which CERCLA-regulated and nonregulated substances may be stored, released, or disposed. During the visual inspection, contamination sources were noted and leaks, spills, and other evidence of releases were observed and quantified; no samples were collected.

2.4.1 Inspection of Nike Battery Kansas City 30 Facility

Evidence of current or past contamination was verified using the following procedures.

Asbestos-containing material: The presence of asbestos-containing material in most of the primary Nike Battery Kansas City 30 buildings was identified in prior asbestos reports. Asbestos-containing material may be present in unsurveyed buildings on the property. Asbestos-containing material (floor tile and pipe insulation) was inspected.

Lead-based paint: A lead-based paint survey was conducted at the Nike Battery Kansas City 30 facility in the summer of 1992. The survey indicated the presence of lead-based paint in all buildings surveyed. Lead-based paint is also likely to be present in unsurveyed buildings based on building age. Surveyed and unsurveyed buildings were inspected, and paint in poor condition was noted.

TABLE 2-2
LIST OF PERSONNEL INTERVIEWED, NIKE BATTERY KANSAS CITY 30

Reference	Name/Phone	Location	Dates of Employment	Job Position
a	Russell Fendick (410) 671-1630	Department of Army, Army Environmental Center	1992-Present	Army Environmental Center Installation Point of Contact
b	Richard N. Wilms (913) 684-4132	Department of Army, Fort Leavenworth, Directorate of Public Works	1990-Present	Installation Point of Contact
c	Mel Stanford (916) 557-6950	U.S. Army Corps of Engineers, Kansas City District	Interviewee declined to provide information	Realty Specialist
d	Linda Norris (913) 551-7827	U.S. Environmental Protection Agency Region VII, Superfund Records Center	Interviewee declined to provide information	File Clerk
e	Richard Thomas (913) 551-7227	U.S. Environmental Protection Agency Region VII, Resource Conservation and Recovery Act Records Center	Interviewee declined to provide information	File Clerk
f	Dianna Newman (913) 551-7887	U.S. Environmental Protection Agency Region VII, Waste Management Division	Interviewee declined to provide information	U.S. Environmental Protection Agency Region VII Installation Point of Contact
g	James Harris	Missouri Department of Natural Resources	Interviewee declined to provide information	State of Missouri Installation Point of Contact

Polychlorinated biphenyls: Information on PCB storage areas, releases, and transformers was gathered through document reviews and searches. PCB investigations at Nike Battery Kansas City 30 included the identification and inspection of the PCB storage area for the facility, namely the Maintenance Shop, Building 3012, which was reportedly used as a temporary storage area for transformers taken off-line during a transformer removal effort conducted in November 1992. The building was inspected to verify current condition and identify evidence of past PCB releases. In addition, the six transformers still at the site were inspected to determine current status, condition, and evidence of release. The former locations of 15 other Army-owned transformers that have been removed from the site were also inspected for evidence of release.

Radon: Radon sampling was conducted in the spring of 1993 at the Nike Battery Kansas City 30 facility. Test results show that radon did not exceed 0.8 picoCuries per liter.

Unexploded ordnance: There were no unexploded ordnance locations at the Nike Battery Kansas City 30 facility identified through document and record reviews and interviews. Ammunition was reportedly stored in Buildings S3028, S3010, and possibly Building S3011. The former two buildings were inspected. The latter building is no longer present. An outdoor small arms firing range was also inspected. None of these locations represent unexploded ordnance areas as defined for this CERFA investigation.

Radionuclides: Installation personnel were interviewed and installation files searched to obtain data on radioactive material storage and use. In addition, the U.S. Army Environmental Hygiene Agency Health Physics Division provided the contractor with information obtained from installation files and U.S. Army Environmental Hygiene Agency archival report files. This information included Nuclear Regulatory Commission licenses and Department of the Army Radioactive Material Authorizations, and U.S. Army Environmental Hygiene Agency reports on radioactive material decommissioning.

Petroleum release or disposal: Areas of potential releases that were identified during document reviews and records search were inspected. Evidence of discoloration or spills was noted, as well as any sheen on nearby bodies of water (i.e., drainage culverts, streams). The region in and around the former oil storage area has naturally revegetated with grass. There was minimal evidence of the former disposal area noted during the CERFA site visit.

Petroleum storage: Information on storage tanks was gathered through document reviews and searches, and includes location, volume, past and present contents, and removal actions. Information was verified during the inspections to the extent possible. Seven underground storage tanks and two aboveground storage tanks have been removed from the site. The Missouri National Guard had installed propane tanks to fuel unit heaters used for heat. These tanks were removed by the Guard before the site was returned to the Army. Evidence of underground storage tank excavation and removal (including changes in vegetation patterns and rectangular areas of disturbed soil) were noted. Former aboveground storage tank locations were also inspected for evidence of past releases.

Hazardous substance release or disposal: Evidence of discolored soils, unusual odors, and stressed vegetation was assessed in locations identified as disposal sites and potential release sites

in prior environmental documentation. Drainage swales, culvert, and streams on the Nike Battery Kansas City 30 facility and on immediately adjacent properties were inspected. Documented and potential sites of dumping, such as the waste oil disposal area and the vehicle wash area, were observed. There has been no industrial wastewater treatment at the Nike Battery Kansas City 30 facility. The abandoned water treatment plant and the sewage treatment plant and its outfall were inspected. The region in and around the former waste oil disposal area has naturally revegetated with grass. There was minimal evidence of the former disposal area noted during the CERFA site visit.

The debris pile noted in the northwest portion of the sewage treatment plant during the Enhanced PA and Sampling Design Plan investigations was reportedly 20 square feet in size at that time. During the CERFA site visit, only a small area, approximately 3 square feet in size, was unvegetated and displayed evidence of the former disposal area (small white chips at the surface, potentially parts of the reported transite piping disposal on the area). The remainder of the area had naturally revegetated with grass.

Hazardous substance storage: Pesticide storage areas at the Nike Battery Kansas City 30 facility were not identified in previous environmental documents. The interior of buildings at the facility that may have contained pesticides in the past (such as the Maintenance Shop, Building S3012) were inspected. Outdoor areas at the installation were also observed for evidence of pesticide releases such as stressed vegetation.

2.4.2 Inspection of the Adjacent Property

A visual inspection of the adjacent property was conducted. Prior to the site visit, a data base search was performed for the area adjacent to Nike Battery Kansas City 30 within a 1-mile radius to identify small- and large-quantity waste generators, underground storage tanks, and leaking underground storage tanks. Both Federal and State data bases were searched (see Section 2.2 of this report). Information obtained from the search was verified through visual inspections. Possible areas of environmental concern were inspected to determine their potential for contamination.

2.5 TITLE DOCUMENTS

TETC conducted a review of tract maps and transfer documents to identify the former property owners of BRAC property at the time of its transfer to the Army. The purpose of this review was to determine the property's prior use and environmental condition at the time of its transfer; however, it did not result in additional information. Previous ownership and the dates of transfer to the Army are indicated on Figure 5-2.

2.6 NEWSPAPER ARTICLES AND MEDICAL RECORDS

A search of the Nike Battery Kansas City 30, USEPA, and State records did not reveal any newspaper articles or medical/biohazardous waste records concerning operations at the installation.

3.0 PROPERTY BACKGROUND INFORMATION

This section presents an overview of past and current operations at Nike Battery Kansas City 30 and a discussion of environmental changes associated with the facility. It addresses activities relevant to waste management practices and significant environmental incidents that occurred since the Enhanced PA and Sampling Design Plan were conducted.

3.1 GENERAL BACKGROUND

The Nike Battery Kansas City 30 facility is a subinstallation of Fort Leavenworth, Kansas. The property was used as a Nike Battery Control Area from 1958 until the late 1960's, when the Nike-Hercules mission was discontinued. The site was inactivated and declared excess by the U.S. Army on January 31, 1968. It was also used by the Missouri National Guard from January 1969 until February 1988, primarily for training exercises. The five full-time civilian employees, as well as the Missouri National Guard units who used the site, were transferred to a new armory in Harrisonville, Missouri. The Enhanced PA indicates that the guard and the Army both occupied the site from 1964 to 1969.

The property was again reported as excess (this time by Fort Leavenworth) in April 1988. However, the Report of Excess was returned by the Headquarters U.S. Army Training and Doctrine Command at Fort Monroe, Virginia, to the installation pending an environmental assessment by USAEC.

Subsequently, the Commission on Base Realignment and Closure identified the Nike Battery Kansas City 30 facility for closure and disposal because it represented excess capacity to the Army and was not required for current or future Army missions. Under Section 201 of Public Law 100-526, the Army was directed to initiate closure of the property between January 1, 1990, and September 30, 1991, and complete closure activities including all necessary environmental investigations by no later than September 30, 1995.

In addition to the Nike Battery Kansas City 30 facility, the Army also owned the Nike Launch Control Area. The Launch Control Area was less than a mile southeast of the Nike Battery Kansas City 30 facility and contained the silos from which the missiles were launched. This land was sold to W.R. Gibson Development Company by quit claim deed dated April 10, 1970. The Launch Control Area is not included in this CERFA investigation.

3.1.1 Past Activities

Several activities occurred at the Nike Battery Kansas City 30 facility in support of the installation's Nike-Hercules mission from 1958 until the late 1960's and Missouri National Guard operations from 1964 to 1988. These activities are described below by building or area of operation.

Building S3001, Sentry Station: Building S3001 was used as a guard house for the facility from 1958 until the installation was vacated in 1988.

Building S3002, Water Treatment Building: Building S3002 is a booster pump station for the former facility drinking water supply system. Water was stored in an aboveground vertical water tank adjacent to the building. The building contains booster pumps and a day tank. It was reported that no water treatment or water treatment chemical storage occurred in the building. The installation underground water distribution system is made up of 4- to 6-inch transite pipes composed of asbestos fibers and portland cement. According to the Enhanced PA, much of this system is leaking.

Building S3003, Administration Building: The building was used for administrative offices, recreation, and storage throughout operation of the facility. One room in the building was used as a weapons storage vault. Fuel oil stored in a 1,500-gallon underground storage tank located adjacent to the building was used for heating before conversion to natural gas in the 1970's. The tank was removed in the winter of 1993.

Building S3004, Non-Commissioned Officer and Officers Quarters: Building S3004 was used as for lodging officers and non-commissioned officers. Fuel oil stored in a 1,500-gallon underground storage tank located next to the building was used for heating before conversion to natural gas in the 1970's. The tank was removed in the winter of 1993.

Building S3005, Barracks and Non-Commissioned Officer Quarters: Building S3005 was used as lodging for officers and non-commissioned officers and enlisted personnel. The building has three major areas: a large barracks hall, offices, and a restroom/bathroom area. During the CERFA site visit, a cabinet marked "flammables" that may have contained hazardous materials or petroleum, oil, and lubricant (POL) products was noted in the building. Fuel oil stored in a 1,500-gallon underground storage tank located next to the building was used for heating before conversion to propane in the 1970's. The oil tank was removed in the winter of 1993.

Building S3006, Mess Hall: Building S3006 was the mess hall. The building contains kitchen and dining areas. Until approximately 1963, a room in the northwest corner of the building was used by the Army to clean mess equipment. From 1963 to 1988, Missouri National Guard used this area as a battery room. It was estimated that a maximum of 10 batteries and 12 1-gallon containers of battery acid were stored in the room at any one time. The room was also used to store paints in lockers. Fuel oil stored in a 2,500-gallon underground storage tank located adjacent to the building supplied fuel for heating purposes before conversion to propane in the 1970's. The oil tank was removed in the winter of 1993.

Building S3007, Generator Building: Building S3007 was designed for four generators, but no records indicate they were ever installed. A 3,000-gallon diesel fuel underground storage tank was located next to the building. The oil tank was removed in the winter of 1993.

Building S3008, Control Van Pad Building: Building S3008 was the radar maintenance shop and also functioned as an interconnecting corridor between a radar control van and a battery

control van, which were situated on concrete pads at the north and south ends of the building, respectively.

Building S3028, Small Arms Ammunition Storage Shed: Building S3028 was originally a radar building. It is also believed to have been the ammunition storage shed for the small arms firing range used by the Missouri National Guard. A 500-gallon underground storage tank located next to the building stored fuel oil for the building heating system. The oil tank was removed in the winter of 1993.

Building S3010, Ammunition Storage Vault: Building S3010 was built during Missouri National Guard occupation and was used as an ammunition storage vault.

Building S3011, Unidentified Building: Activities conducted in Building S3011 (located to the north of Building S3010) have not been verified. However, it is suspected that the building was used for ammunition storage by Missouri National Guard. The building is no longer in place.

Building S3012, Vehicle Maintenance Shop: Building S3012 was installed by the Missouri National Guard in the mid-1960's. Maintenance shop activities were performed here from the mid-1960's to 1988, and included routine vehicle maintenance such as oil, antifreeze, and brake fluid changes. A portable 20- to 30-gallon parts cleaner was used in the building from 1975 to 1988. Initially, waste oil was dumped outside on the ground. It was later stored outside in drums and, finally, in a 250-gallon tank in the waste oil storage area. Waste antifreeze was reportedly disposed of by throwing it outside the maintenance shop and allowing it to drain into the surrounding grassy area. A floor drain in the maintenance shop flows to the sewage treatment plant.

A 3,000-gallon motor-vehicle gasoline underground storage tank was located north of the maintenance shop. The tank was used from approximately 1969 to 1988 and removed in the winter of 1993. A diesel aboveground storage tank was located west of the gasoline underground storage tank. The aboveground storage tank was used from approximately 1970 to 1988 and removed in 1988.

The Maintenance Shop was emptied when the Missouri National Guard vacated the installation in 1988. However, in late 1992 and early 1993, the building was used for the temporary storage of installation transformers taken off-line prior to their offsite disposal. The transformers were stored on drip pans on the concrete floor of the building and were removed within 90 days.

Between 1963 and 1968, an average of 75 to 90 vehicles annually were reportedly washed in a graveled parking lot north of the Maintenance Shop; wash water was allowed to drain into surrounding grass. At some time during this period, the parking lot was paved and curbed. A concrete drainageway installed in the curbing allowed surface water to flow to the north from the paved area.

A waste oil accumulation/storage area was also located outside of the Maintenance Shop. The site covered approximately 50 square feet and was used by the Missouri National Guard from

approximately 1975 to 1988 to store waste oil in 55-gallon drums. Prior to using this storage area, waste oil was disposed at the waste oil disposal area (described below).

Building S3013, POL Storage Connex: Building S3013, a metal storage connex, was located in a gravel area at the northwest corner of the Maintenance Shop. The connex was used to store transmission, hydraulic, and engine oil and grease. The shed was removed in 1988 when the Missouri National Guard vacated the site. The maximum quantity of oil and grease stored in the connex was estimated at 30 gallons. The largest container size was 5 gallons. The shed was not present at the time of the CERFA site visit.

Building S3014, POL/Paint Storage Shed: Building S3014, a metal storage shed, was located northwest of the Maintenance Shop. The building was used until approximately 1980 for the storage of small cans of paint, oil, and possibly paint-related solvents. The shed was not present at the time of the CERFA site visit.

Building S3015, POL/Paint Locker: Building S3015 was an old paint locker used by the Army until 1969 to store touch-up paints and small cans of grease. Prior documents do not indicate whether the locker was used by Missouri National Guard, although it is possible. The locker was reportedly not used from 1981 to 1988. During the Enhanced PA, Sampling Design Plan, and Environmental Assessment Site Investigations, the locker was located near the westernmost radar pad. From 1969 to 1974, the locker was located west of the interconnecting corridor. In 1974, the locker was emptied. The shed was not present at the time of the CERFA investigation.

Radar Stations: In addition to the 12 buildings, there were 4 radar stations located on-site. The stations were used in operation of the Nike Missile Battery. Currently, only one station has an aboveground radar monitoring structure. The remaining three have only the concrete pads left.

Waste Oil Disposal Area: A grassy area located approximately 240 feet west of the Maintenance Shop was used for the disposal of waste oil generated during use of the facility as a missile battery. The activity was reportedly discontinued in 1975.

During the Enhanced PA site visit, an area of approximately 20 square feet was observed to have black stained soil. There was limited staining evidence at the time of the CERFA site visit.

Oil Storage Area: An area located approximately 150 feet northwest of the Maintenance Shop was used as a POL product/waste storage area by the Missouri National Guard from approximately 1975 to 1988. The area was used to store no more than three 55-gallon drums of fresh oil stored on wooden pallets; waste oil, and solvents. Reportedly, waste solvent and oil were mixed in the drums. An estimated 150 gallons of waste oil was the maximum generated per year. The wastes were reportedly sent to the National Guard Armory in Jefferson City.

It is reported that a few drums in the area had toppled over, spilling waste oil. According to Missouri National Guard personnel, a 250-gallon aboveground storage tank was installed at this location during the early 1980's. Waste oils were emptied into this tank instead of the 55-gallon

drums. From 1981 to 1988, the 250-gallon aboveground storage tank was reportedly pumped out twice for disposal by a private contractor.

During the Enhanced PA site visit, staining was noted in the former oil storage area. There was no staining or other evidence of the former storage area noted during the CERFA site visit.

Small Arms Practice Range: A small arms practice range was constructed by the Missouri National Guard at the Nike Battery Kansas City 30 facility. The range consists of a soil berm located between the ammunition storage shed (Building S3028) and one of the radar pads. Railroad ties were used to hold the soil behind the target area. Small arms and rifles were fired from windows in the small arms ammunition storage shed into the soil berm. Most bullets and spent ammunition were removed when the Missouri National Guard vacated the facility. However, bullet fragments may remain because the area was not completely cleared.

Former Sewage Treatment Plant: An abandoned gravity-flow sewage treatment plant is located in the north corner of the east parcel of the Nike Battery Kansas City 30 facility. The plant consists of an Imhoff tank for primary treatment with a trickling filter and a final settling tank for secondary treatment. A bar screen chamber was provided at the inlet of the plant to remove large solids that might clog or damage piping or pumps. The final circular settling tank was used to remove the solids in the trickling filter effluent. The sludge from this tank was pumped to the Imhoff tank, which consists of an upper and lower tank for primary settling and digestion. The upper tank was used to remove settleable solids from the raw sewage, and the lower tank was used to digest the sludge. A dosing siphon provided a means for storing the effluent from the primary settling unit until sufficient volume had been collected at an adequate head to rotate the trickling filter distribution arm and properly distribute the sewage over the filter. The system discharged into the drainage ditch along Highway KK, which drained to the unnamed creek flowing to the east branch of Crawford Creek.

The sewage treatment plant was operated until 1968 when the Army closed the missile facility. From 1969 until the Missouri National Guard vacated the property, the sewage treatment plant was used only as a septic tank and was serviced by a private contractor. The overflow was discharged to the outfall without further treatment. At present, the Imhoff tank may contain some digested sewage, rainwater, or a mixture of the two.

A small pile of debris, approximately 20 square feet in size and less than 2 feet high, was observed in the northwest area of the sewage treatment plant during the Enhanced PA. The debris pile was apparently a minor disposal area for construction/demolition materials including concrete, wood, and old broken transite piping consisting of asbestos and portland cement. At the time of the CERFA site visit, only a small, 3-foot diameter disturbed area was evident at the location.

3.1.2 Current Activities

The Nike Battery Kansas City 30 facility was vacated by Missouri National Guard in 1988 and declared excess by Fort Leavenworth. Since that time, activities at the installation have consisted solely of site environmental characterization and remedial activities. Enhanced PA and

Sampling Design Plan site investigations were conducted in 1989 and 1990, respectively. Lead-based paint and asbestos sampling was conducted in the summer of 1992. Transformer removal, underground storage tank, and associated contaminated soil removal operations were conducted between November 1992 and April 1993. Radon testing was initiated in February 1993.

3.2 ENVIRONMENTAL CHANGES AT NIKE BATTERY KANSAS CITY 30 FACILITY

A number of changes have occurred at the Nike Battery Kansas City 30 facility since the time of the Enhanced PA and Sampling Design Plan investigations conducted in 1989 and 1990. The majority of these changes are related to the remedial activities identified in Section 3.1.2 above. These and other environmental changes at the facility are described in detail in Section 4.5.

Building S3014 (the former POL/paint storage shed) and Building S3015 (the former POL/paint locker) have been removed. The following two remedial action activities have occurred at the facility:

Secondary electrical service at the facility was deactivated. Fifteen transformers were removed from service. Two of these transformers that were PCB-contaminated were shipped to a treatment facility. The remaining 13 transformers were transformed to Fort Leavenworth Defense Reutilization Marketing Office for disposal.

Seven underground storage tanks and associated contaminated soil were removed. Approval for clean-closure has been obtained from the State of Missouri.

4.0 INVESTIGATION RESULTS

This section describes the results of the CERFA investigation. The first part describes all areas within the BRAC property that have been addressed in reports prior to the CERFA investigation, and the second part describes all areas within the BRAC property that have not been addressed in previous reports. The third part identifies adjacent properties that may be potential sources of contamination. The fourth part describes areas containing items not regulated by CERCLA, and the fifth part describes areas where remediation has occurred. Part six describes real property within the BRAC property that will be retained by the Army.

4.1 PREVIOUSLY IDENTIFIED AREAS REQUIRING ENVIRONMENTAL EVALUATIONS

This part describes both existing areas requiring environmental evaluations and those that have undergone change.

4.1.1 *Existing Areas Requiring Environmental Evaluations*

Twenty-four individual building, area, and programmatic environmentally significant operations were identified in prior environmental documentation. These documents are described in Section 2.1 of this report. Eighteen of the environmentally significant operations identified were categorized as areas requiring environmental evaluations. A listing of the 24 environmentally significant operations identified in these documents, including identification of those classified as areas requiring environmental evaluations, is provided in Table 4-1.

Past activity associated with each of the environmentally significant operations/areas requiring environmental evaluations is described in Section 3.1.1. A brief description of the environmentally significant operations associated with these areas and resultant reasons for their consideration as areas requiring environmental evaluations is provided below.

Building S3003, Administration Building: Asbestos is present in the building. In addition, a 5-gallon bucket containing an unidentified powder was noted in the building during Enhanced PA and Sampling Design Plan investigations. Lead-based paint was identified as potentially present in the building in the Sampling Design Plan. Sampling methods for lead-based paint were outlined in the Draft Sampling Design Plan. Sampling of the unknown material in the 5-gallon bucket was also recommended in the Enhanced PA, and sampling procedures were identified in the Sampling Design Plan.

Building S3004, Non-Commissioned Officer and Officers Quarters: Asbestos is present in the building. Lead-based paint was identified as potentially present in the building in the Sampling Design Plan. Sampling methods for asbestos and lead-based paint were outlined in the plan.

TABLE 4-1
PREVIOUSLY IDENTIFIED AREAS REQUIRING ENVIRONMENTAL EVALUATION IN
BRAC PROPERTY, NIKE BATTERY KANSAS CITY 30

Building Number	Name	Coordinate Location (x,y) Figure 5-1	Parcel Number	Enhanced Preliminary Assessment	Sampling Design Plan
S3003	Administration Building	(4,4)	4D	AREE	AREE
S3004	NCO and Officers Quarters	(5,5)	4D	AREE	AREE
S3005	Barracks and NCO Quarters	(4,4)	4D	AREE	AREE
S3006	Mess Hall	(4,5)	4D	AREE	AREE
S3010	Ammo Storage Vault	(4,4)	4D	AREE	ESO
S3011	Former Unidentified Building	Not Mapped	Not Mapped	AREE	ESO
S3012	Maintenance Shop	(4,5)	4D	ESO	ESO
S3012	Vehicle Wash Area	(4,5)	4D	AREE	AREE
S3012	Former Aboveground Storage Tank	(4,5)	4D	ESO	ESO
S3013	Former POL Storage Connex (Area)	(4,6)	4D	ESO	ESO
S3014	Former POL/Paint Storage Shed	(4,4)	4D	ESO	ESO
S3015	Former POL/Paint Locker	(2,3)	4D	ESO	ESO
S3028	Ammo Storage Shed for Small Arms	(3,3)	4D	ESO	ESO
	Former Waste Oil Disposal Area	(3,6)	4D	AREE	AREE
	Former Oil Storage Area	(4,6)	4D	AREE	AREE
	Former Small Arms Practice Range	(3,3)	4D	AREE	AREE
	Former Sewage Treatment Plant	(9,6)	2D	AREE	AREE
	Debris Area at Sewage Treatment Plant	(9,6)	2D	AREE	AREE
	Installation Asbestos Water Pipe	Multiple	Multiple	AREE	ESO
	Installation Underground Storage Tanks	(4,4)	4D	AREE	AREE
	Installation Transformers	Not Mapped	Not Mapped	AREE	AREE
	Lead-Based Paint in Primary Buildings	Multiple	Multiple		AREE
	Lead in Installation Water System	Not Mapped	Not Mapped		AREE*
	Radon in Primary Buildings	Not Mapped	Not Mapped		AREE

Key: AREE = Area Requiring Environmental Evaluation
 ESO = Environmentally Significant Operation
 POL = Petroleum, Oil, and Lubricant
 CERFA = Community Environmental Response Facilitation Act
 NCO = Non-Commissioned Officer

*Although the Sampling Design Plan identifies lead in the water system as a potential health hazard, sampling was not recommended (see narrative description).

Building S3005, Barracks and Non-Commissioned Officer Quarters: Asbestos is present in the building. Lead-based paint was identified as potentially present in the building in the Sampling Design Plan. Sampling methods for asbestos and lead-based paint were outlined in the plan.

Building S3006, Mess Hall: Asbestos is present in the building. Batteries, containers of battery acid, and paints were stored in a Battery Room in the building. Lead-based paint and radon were identified as potentially present in the building in the Sampling Design Plan, and sampling methods for both were outlined.

Prior investigations indicated that there was no evidence of past spills or waste disposal in the former battery room. If spills or disposal occurred, liquids would have entered the floor drain and flowed to the facility sewage treatment plant. Therefore, the Enhanced PA and Sampling Design Plan recommended no further investigations in the Battery Room.

Building S3010, Ammo Storage Vault: At the time of the Enhanced PA, access to the Ammo Storage Vault could not be gained. As a result, an unknown degree of hazard was identified for the building. The storage vault was opened and inspected during the Sampling Design Plan investigation and was determined to contain no potential sources of contamination. Therefore, no further action was recommended at the Ammo Storage Vault.

Building S3011, Former Unidentified Building: At the time of the Enhanced PA, access to the "yellow unidentified building" could not be gained. As a result, like Building S3010, an unknown degree of hazard was identified for the building. The Sampling Design Plan indicated that the building was actually a portable storage container, and no further action was warranted.

Building S3012, Maintenance Shop: Vehicle and equipment maintenance was conducted in the Maintenance Shop by the Missouri National Guard. Suspected releases to the environment as a result of Maintenance Shop activities were identified in the Enhanced PA and included waste oil disposed of at the waste oil disposal area, oil spillage at the oil storage area, and waste antifreeze disposed of into the area that received runoff from the vehicle wash area. Each of these sites was identified as an environmentally significant operation separate from the Maintenance Shop building. No further investigation was recommended at the Maintenance Shop itself in either the Enhanced PA or Sampling Design Plan.

Building S3013, Former POL Storage Connex: The Enhanced PA identified the former location of the POL Storage Connex near the Maintenance Shop as an environmentally significant operation because it stored POL products. However, no evidence or indication of releases to the environment from this location was identified in the Enhanced PA or Sampling Design Plan investigations. Therefore, no further investigation was recommended for this location in either report.

Building S3014, Former POL/Paint Locker: The Enhanced PA identified the POL/Paint Storage Locker as an environmentally significant operation because it was used to store POL products and hazardous materials. However, no evidence or indication of releases to the environment from this location was noted in the Enhanced PA or Sampling Design Plan. Therefore, no further investigation was recommended for this location in either report.

Building S3028, Ammo Storage Shed for Small Arms: Prior investigations indicated the building may have been used for ammunition storage. However, both the Enhanced PA and Sampling Design Plan found no evidence of releases associated with these activities and recommended no further investigation for the building.

Vehicle Wash Area: The Enhanced PA indicated potential soil contamination at the site from oil and grease runoff from vehicle washing operations and possible solvent and antifreeze disposal associated with maintenance shop activities. The Enhanced PA recommended soil and groundwater sampling in the area. The Sampling Design Plan recommended the collection of two shallow soil samples from the drainage pathway at the northern edge of the Maintenance Shop parking area. Analysis for volatile organic compounds, base neutral acids, and RCRA metals was recommended for the samples. It should be noted that due to the relatively close proximity of the vehicle wash area to the Maintenance Shop, Building S3012, and the area's operational relationship with the shop, the vehicle wash area has been considered "associated" with Building S3012 for the purposes of CERFA site parcelization analysis (see Section 5.0) and has not been designated as a separate area.

Former Waste Oil Disposal Area: Waste oil and possibly waste solvents were dumped in the area. Soil staining in the area was noted during the Enhanced PA and Sampling Design Plan investigations. Site investigations, including two soil borings, drainage sediment sampling, and the installation of two groundwater monitoring wells were recommended in the Sampling Design Plan. Soil, sediment, and groundwater samples were to be analyzed for volatile organic compounds, base neutral acids, total petroleum hydrocarbons (TPHs), and RCRA metals.

Former Oil Storage Area: Some evidence of staining as a result of accidental minor spills and leaks was noted in this area during the Enhanced PA and Sampling Design Plan investigations. The Sampling Design Plan recommended two shallow soil borings in the area because the vertical extent of contamination in this area is presumed to be shallow. Samples were to be analyzed for volatile organic compounds, base neutral acids, TPHs, and RCRA metals.

Former Small Arms Practice Range: Soil in the firing range berm and areas in front of the berm may contain spent bullets containing lead and other metals. The Enhanced PA recommended that berm soils be removed and soil sampling in the area be conducted. The Sampling Design Plan recommended the collection of multiple soil samples from the area, sample compositing, and analysis for RCRA metals to determine degree and extent of residual contamination of the site.

Former Sewage Treatment Plant and Outfall: The sewage treatment plant received wastewater potentially contaminated with acids, solvents, oil, and heavy metals from various facility operations. Because these materials could have passed through the sewage treatment plant with minimal (if any) treatment, contamination may be present at the sewage treatment plant outfall. This outfall is located just outside the northern part of the fence surrounding the sewage treatment plant. To determine the extent of any contamination, the Sampling Design Plan recommended that one sediment sample be collected from the outfall ditch where sediments have accumulated. This sample was to be analyzed for volatile organic compounds, TPHs, and

RCRA metals. The Sampling Design Plan also recommended that an additional sediment (sludge) sample be collected from the Imhoff tank to provide data on potential contaminants that may have passed through or accumulated within the treatment units. At the time of the CERFA investigation, sampling had not been conducted.

Debris Area at Sewage Treatment Plant: The discarded piping observed in this location during the Enhanced PA and Sampling Design Plan investigations is a type thought to contain asbestos. However, the asbestos was not in friable form, and the total quantity potentially present in the debris area was identified as minimal. In addition, the debris was in the open, and no enclosed air hazard was present. Pipe sampling and analysis were recommended in the Enhanced PA. However, due to the low hazard associated with the area, the plan indicated that no further investigation was necessary at the site.

Asbestos Water Pipe: Part of the underground water distribution system at the Nike Battery Kansas City 30 facility consists of transite pipes, which are composed partially of asbestos. The Enhanced PA recommended sampling and analysis of water from drinking water taps. However, the entire water system has been discontinued and cannot be used or sampled. As a result, no sampling was recommended in the Sampling Design Plan.

Underground Storage Tanks: Seven underground storage tanks were located at the facility at the time of the Enhanced PA and Sampling Design Plan investigations. The relatively old tanks (25 to 30 years) had never been integrity tested and may have leaked. The Enhanced PA and Sampling Design Plan recommended tank tightness testing of all the tanks. The plan recommended subsequent soil borings around tanks determined to be leaking. Soil boring samples would be continuously sampled with a photoionization detector field instrument and the sample with the highest reading would be sampled for volatile organic compounds, base neutral acids, TPHs, and RCRA metals. Groundwater encountered would also be sampled and analyzed for TPHs. All underground storage tanks were subsequently removed in 1993.

It should be noted that, due to the seven underground storage tanks' proximity and operational relationship with particular buildings (i.e., heating fuel tanks for building heating, diesel fuel tank for generator building, motor-vehicle gasoline tank for Vehicle Maintenance Shop), individual underground storage tanks are considered to be associated with respective buildings for the purposes of CERFA site parcelization analysis (see Section 5.0), rather than as individual environmentally significant operations.

Transformers: Eighteen Army-owned transformers were located on the facility. At the time of the Enhanced PA and Sampling Design Plan investigations, none had been sampled for PCBs. Both studies proposed PCB sampling of these units. Based on Enhanced PA recommendation, sampling of soil around one transformer (Transformer 10G), located directly on the ground, was proposed in the Sampling Design Plan if the PCB analysis of the unit indicated a content of greater than 50 parts per million PCBs. Transformers were subsequently removed and sampling of transformer 10G indicated less than 50 parts per million PCBs; therefore, sampling of the remaining transformers was not necessary.

Former Aboveground Storage Tank: The Enhanced PA identified a former 1,500-gallon diesel fuel aboveground storage tank at the facility as an environmentally significant operation. This tank was located west of the motor-vehicle gasoline underground storage tank at Building 3012. However, neither Enhanced PA or Sampling Design Plan investigations identified evidence of releases in the area. Therefore, no further investigation was recommended in either report.

Lead-based Paint: Lead-based paint was not addressed as an environmentally significant operation in the Enhanced PA. However, it was identified as a concern in the Sampling Design Plan. Sampling in Buildings S3003, S3004, S3005, and S3006 was proposed.

Lead in Water System: Lead in the water system solder and piping was not addressed as an environmentally significant operation in the Enhanced PA, but it was identified as a concern in the Sampling Design Plan. However, because the water supply has been disconnected, sampling was not possible.

Radon: Radon in buildings was not addressed as an environmentally significant operation in the Enhanced PA, but it was identified as a concern in the Sampling Design Plan. A radon sampling program was designed for Buildings S3003, S3004, S3005, and S3006.

4.1.2 Existing Areas Requiring Environmental Evaluations and Environmental Significant Operations that Have Expanded in Size

Some areas requiring environmental evaluation identified in previous environmental studies have changed in size. Areas requiring environmental evaluation or sites where remediation has occurred are discussed in Part 4.5. No areas were identified where size has expanded.

4.2 ADDITIONAL AREAS IDENTIFIED BY THE CERFA INVESTIGATION

Two areas requiring environmental evaluations were identified through the CERFA investigation. These areas requiring environmental evaluations were determined through on-site inspections, personnel interviews, and records searches. New areas requiring environmental evaluations associated with CERCLA-related environmental issues are described in this section. New CERCLA-related environmentally significant operations (identified for the first time in the CERFA investigation) that do not constitute status as areas requiring environmental evaluations are also described. Areas requiring environmental evaluations and environmentally significant operations that have undergone changes since previous environmental documents are described.

Building S3005, Barracks and Non-Commissioned Officer Quarters: A cabinet marked "flammables" was observed in Building S3005 during the CERFA site visit. This cabinet which was not identified in any former environmental reports, may have been used for the storage of hazardous materials and/or POL products.

Building S3002, Water Treatment Building: During the CERFA site visit, evidence of leaks from air compressor and water pump equipment was observed inside the building. Oil and oil stains were noted on the concrete floor of the building. There was no evidence that the releases had extended outside the building.

Asbestos: Asbestos sampling was conducted at Buildings S3003, S3004, S3005, and S3006 during the summer of 1992. Sample analysis results confirmed the presence of asbestos-containing material including pipe and hot water tank insulation, and floor tile in these buildings. In addition to the primary structures at Nike Battery Kansas City 30, a number of minor buildings on the property may also contain asbestos in piping insulation, ceiling tile, or other building materials. These include Buildings S3002, S3007, S3008, S3012, S3028, and S3010. These buildings were identified as new areas requiring environmental evaluations based on CERFA investigation.

Lead-based Paint: Lead-based paint sampling was conducted at Buildings S3003, S3004, S3005, and S3006 during the summer of 1992. Sample analysis results confirmed the presence of lead-based paint in these buildings. Most minor buildings on the property are also older and have the potential to contain lead-based paint. These include Buildings S3001, S3002, S3007, S3008, S3010, S3012, and S3028. These minor structures were identified as new areas requiring environmental evaluations based on CERFA investigation.

4.3 ADJACENT AND SURROUNDING PROPERTIES

The area around the Nike Battery Kansas City 30 facility is primarily farmland. The facility is bounded by cultivated and uncultivated farmland to the north, south, and west, and by several residential properties across Highway KK to the east.

4.3.1 Existing or Potential Pathways of Contamination Migration

Topographic and hydrogeological information for the Nike Battery Kansas City 30 facility provided in environmental documents was reviewed to assess potential contamination migration pathways onto the installation from adjacent properties. This information was used in combination with data on potential contamination sources on adjacent and surrounding property to determine if there were any existing or potential environmental impacts on the Nike Battery Kansas City 30 facility from offsite sources. Contamination source data were obtained through record searches, review of existing environmental reports, personnel interviews, and property site visits. The results of these adjacent and surrounding property evaluations are described below.

In general, the potential for the offsite introduction of contamination onto the Nike Battery Kansas City 30 facility is low. There are no major drainages that flow onto the installation. Based on site topography (relatively flat), drainage from the farmlands to the south and west of the property are not anticipated to contribute any significant on-site surface water flow, but the most likely drainage appears to be to the north. Residential properties to the east are separated from the facility's drainage system by Highway KK and associated drainage culverts. The direct dumping of materials onto the Nike Battery Kansas City 30 facility is prevented by 12-foot hurricane fence that surrounds the property.

4.3.2 New Areas Requiring Environmental Evaluations Resulting from Adjacent and Surrounding Properties

In order to identify potential offsite contamination sources for the Nike Battery Kansas City 30 facility, a records search of Federal and State data bases (see Section 2.2) was conducted. The results of this search are provided in Appendix B. The search indicated the following:

- ★ No National Priorities List or CERCLA sites are reported within a 1-mile radius of the Nike Battery Kansas City 30 facility.
- ★ No RCRA treatment, storage, or disposal facilities are reported with a 1-mile radius of the site.
- ★ No large- or small-quantity generators of hazardous waste are reported within a 1-mile radius of the site.
- ★ No emergency response notification system spills are reported within a 1-mile radius of the site.
- ★ No intact or leaking underground storage tanks are reported within a 1-mile radius of the site.

In addition to the data base search completed for the installation, adjacent property site inspections were also conducted. During this site inspection, there was no visible evidence of adjacent property operations that represented a potential contamination migration source.

4.4 RELATED ENVIRONMENTAL, HAZARDS, AND SAFETY ISSUES

Military installations frequently contain issues that USAEC believes fall outside of the provisions of CERFA. For example, while a release of lead-based paint onto the ground may be a CERCLA concern, the application of lead-based paint to a building surface generally is not. However, lead-based paint applied to buildings may represent a safety hazard to young children. Similarly, other substances or materials commonly applied to or found in buildings (for example, radon and asbestos) may not be explicitly regulated under CERCLA, but may require that potential transferees and lessees be notified of their presence.

USAEC has sought to balance the statutory requirements of CERFA with the law's intent to identify uncontaminated property to the public that can be expeditiously reused. Notice has been provided for those parcels that appear to be uncontaminated under the definition provided in CERFA, but which may contain environmental, hazard, or safety issues. Buildings that contain asbestos-containing materials, lead-based paint, or naturally occurring radon fall into this category and are identified as CERFA Parcels with Qualifiers in this CERFA Report. Parcels that contain stored (not in-use) equipment that contains some level of PCB oil, stored low level radionuclide-containing equipment such as dials and weapon site posts, and unexploded ordnance are also designated CERFA Parcels with Qualifiers.

In those cases, however, where (for example) asbestos or PCBs have been disposed in the environment, the parcel has been identified as CERFA Disqualified. In this example, the designation indicates that a CERCLA hazard may exist at this location. The following discussion addresses the presence of asbestos-containing material, lead-based paint, PCB storage, radon, unexploded ordnance, and radionuclides.

4.4.1 Asbestos

The Enhanced PA and Sampling Design Plan indicated the presence of asbestos-containing materials in Buildings S3003, S3004, S3005, and S3006, as well as the facility underground domestic water piping system. Asbestos sampling conducted in the summer of 1992 confirmed the presence of asbestos in pipe and hot water tank insulation and floor tile in the buildings. No sampling of the underground domestic water piping has been conducted, and the piping system was not considered in the CERFA Parcelization process. The CERFA investigations concluded that asbestos-containing material may also be present in pipe insulation and/or ceiling materials in Buildings S3002, S3007, S3008, S3028, and S3012. No sampling has been conducted in these buildings. In addition to buildings and underground piping, the Enhanced PA and Sampling Design Plan indicated the presence of asbestos-containing material from transite pipe disposed in a debris pile at the sewage treatment plant. This area was considered as a hazardous release site for this CERFA investigation.

4.4.2 Lead-based Paint

The Sampling Design Plan indicated that a lead-based paint hazard is likely to be present in main buildings at the Nike Battery Kansas City 30 facility due to their age. All the buildings at the installation were constructed prior to 1978. Sampling conducted in the summer of 1992 confirmed the presence of lead-based paint in Buildings S3003, S3004, S3005, and S3006.

No quantitative information regarding the presence of lead-based paint in the other structures at the facility is available. For the purpose of the CERFA investigation, all structures constructed before 1978 are assumed to contain lead-based paint. This includes Building S3001, S3002, S3007, S3008, S3028, S3010, and S3012, as well as the four main facility buildings where lead-based paint has already been confirmed.

4.4.3 Polychlorinated Biphenyls

CERFA investigations addressed the storage and releases of PCBs at the facility. Assessment at active transformers at the facility was limited to current condition and evidence of release. The Enhanced PA identified 21 electrical transformers at the Nike Battery Kansas City 30 facility; 18 were Army-owned units whose PCB content was reportedly unknown. Three units were owned by the Missouri Public Service Electricity Utility. The three transformers formed the shutdown break for the incoming power at the facility. According to Missouri Public Service Electricity Utility, these transformers were installed between 1984 and 1985 and do not contain PCBs.

The Enhanced PA identified the transformer at environmentally significant operation 10G as having a loose cap; soil sampling was recommended pending transformer oil analysis for PCBs. It was later determined that sampling was not required. There was no visual evidence of releases at the former transformer location noted during the CERFA visit.

PCB testing of the Army-owned units was conducted in or around September 1992. Testing results indicated two of the transformers contained PCB-contaminated dielectric fluid. In November 1992, secondary electrical service at the installation was deactivated and all but three of the Army-owned transformers, including one of the PCB-contaminated units were disconnected. The transformers were temporarily stored (less than 90 days) in the Maintenance Shop (Building S3012) until they were properly disposed. There was no visual evidence of PCB releases noted in the Maintenance Shop during the CERFA visit.

Transformers remaining at the facility include the three active Missouri Public Service Electricity Utility units, two active non-PCB Army-owned units, and one off-line PCB-containing unit. At the time of the CERFA site visit, there was no evidence of leakage associated with any of the transformers remaining on the facility property.

4.4.4 Radon

A radon testing program for the Nike Battery Kansas City 30 facility was proposed in the Sampling Design Plan. Radon testing was conducted in the spring of 1993 in Buildings S3003, S3004, S3005 and S3006. Test results show that radon did not exceed 0.8 picoCuries per liter of air.

4.4.5 Unexploded Ordnance

The presence of unexploded ordnance at the Nike Battery Kansas City 30 facility was not identified in prior environmental investigations conducted at the facility. Based on file searches in support of this CERFA investigation, there is no evidence of buried unexploded ordnance at the facility. A small arms practice range was reportedly located at the facility. Spent bullets containing lead may be present in this area; however, it is not anticipated that unexploded ordnance is present at this location.

4.4.6 Radionuclides

There is no evidence of radionuclide storage or use at the Nike Battery Kansas City 30 facility in previous environmental documentation or in documents reviewed during CERFA investigations. CERFA site visits, investigations, and personnel interviews confirm that radionuclides have not been used or stored at the facility. In addition, a U.S. Army Environmental Hygiene Agency review of records pertaining to radioactive materials use at CERFA installations did not indicate any radioactive materials use at the Nike Battery Kansas City 30 facility.

4.5 REMEDIATION EFFORTS

Remedial efforts conducted at the Nike Battery Kansas City 30 facility to date are as follows:

Tank Removal: The seven underground storage tanks and the two aboveground storage tanks at the installation have been removed. The removal of contaminated soil associated with the seven underground storage tanks has also been conducted.

Telephone notification of pollution incident forms submitted to the Missouri Department of Natural Resources indicated that contaminated soil was encountered in association with the removal of the 2,500-gallon fuel oil tank at Building S3006, the 6,000-gallon diesel oil tank at Building S3007, the 500-gallon fuel oil tank at Building S3028, and the 3,000-gallon motor-vehicle gasoline tank at Building S3012. The removal and proper disposal of 20 cubic yards of soil were conducted at each of the first three underground storage tank removal sites. Approximately 200 cubic yards of soil were removed at the 3,000-gallon tank site. Remediation was reportedly complete at all but the 500-gallon underground storage tank removal site at Building S3028.

The Army is currently filing the appropriate documentation to the Missouri Department of Natural Resources to obtain clean closure certification for these six tanks. At the 500-gallon tank location, the contamination reportedly extends below the building slab and could not have been removed without compromising the structure. The Army is working with the Missouri Department of Natural Resources to obtain closure documentation for this tank removal site with no further remediation.

Transformers: Transformers were identified as installation-wide areas requiring environmental evaluation in the Enhanced PA and Sampling Design Plan. Around November 1993, secondary electrical service at the facility was deactivated. Fifteen transformers were removed from service. Two of these transformers were PCB-contaminated and were temporarily stored in the Maintenance Shop, Building S3012, prior to transport to a treatment facility. There were no signs of leakage, so no samples were deemed necessary. During storage, they were contained in drip pans. The remaining thirteen transformers were taken to Fort Leavenworth Defense Reutilization Marketing Office for disposal without being stored on-site.

Three transformers still at the site are owned by Missouri Public Service Electric Company and are PCB-free.

General Facility Closure Actions: Past on-site waste oil, waste antifreeze, and waste solvent disposal, hazardous materials and POL product/waste storage activities, sewage treatment plant operation, and other environmentally significant operations at the facility have all been discontinued. The former disposal activities were discontinued due to their potential environmental impact. The latter environmentally significant operations were discontinued by 1988 when the Missouri National Guard vacated the facility. There are currently no environmentally significant operations conducted at the Nike Battery Kansas City 30 facility.

Building Removal: Buildings S3014 and S3015, the former POL/Paint Storage Shed and POL/Paint Locker at the installation identified as environmentally significant operations in the Enhanced PA, have both been removed.

4.6 CERFA-EXCLUDED AREAS

CERFA-Excluded Parcels consist of those parcels to be retained by the Army or other Department of Defense agency or property that will be transferred to another Federal agency with restrictions by statute. At present, the Army does not have plans to retain any portion of Nike Battery Kansas City 30.

5.0 SITE PARCELIZATION

After reviewing investigation documents, regulatory records, personnel interviews, and visual inspections, TETC identified parcels on the installation as CERFA Parcels, CERFA Parcels with Qualifiers, CERFA Disqualified Parcels, or CERFA-Excluded Parcels in accordance with the definitions in Section 1.2. The parcels are delineated on a map of the BRAC portion of the installation using a 1-acre square grid for boundary definition. The Army chose a 1-acre grid system to aid in the presentation of data gathered during the CERFA Report investigation, and to facilitate use of the document by reuse groups and others. The 1-acre grid provided a consistent method to report and locate environmental or other concerns. In the many cases where the concerns are much smaller than 1-acre, the grid system simplifies the depiction of the concern. Accordingly, the areal extent of many small areas of concern, such as underground storage tank sites, are liberally depicted in the CERFA Report. Additionally, the 1-acre grid size was chosen as a generally redevelopable parcel size for either industrial or residential uses. The grid does not drive reuse nor restrict it. Reuse decisions should be made irrespective of the grid. The entire 1-acre grid square is colored or shaded to indicate the applicable parcel category on the basis of the history of storage or release for any portion of that square. Parcels are labelled according to a system outlined in Section 1.2 of this report to indicate the applicable parcel category and the contaminating circumstances. Parcel labels are connected to the respective parcel boundaries by a line or are located within the parcel boundaries.

Where CERFA Disqualified Parcels and CERFA Parcels with Qualifiers have coincided, the overlapped area has been designated CERFA Disqualified. Labels for any such overlapped parcels also indicate the presence of the qualifying hazards. CERFA-Excluded Parcels have been excluded from this investigation of contaminant locations and therefore do not overlap with CERFA Disqualified Parcels or CERFA Parcels with Qualifiers. Structures within CERFA Disqualified Parcels that contain qualifying safety hazards are designated with the applicable qualifying label, where map scale permits this level of detail.

TETC's investigation and subsequent parcelization of Nike Battery Kansas City 30 determined that approximately 9 acres of the facility fall within the CERFA Parcel category. No portions of the facility are categorized as CERFA Parcels with Qualifiers. Eleven (11) acres constitute the CERFA Disqualified portion of the installation. The CERFA Parcels are located predominantly in the west portion of the installation.

In determining the applicable parcel categories for the installation property, TETC observed the following guidelines provided by USAEC for specific circumstances:

- ★ Buildings constructed prior to 1978 are assumed to contain lead-based paint. A similar assumption is made for asbestos in buildings constructed prior to 1985.
- ★ Storage of petroleum products, petroleum derivatives, and CERCLA-regulated hazardous substances will prevent an area from becoming a CERFA Parcel as long as that storage is for one year or longer. The quantity of substances stored

is not relevant to determining the applicable parcel category. However, if the operation requiring such substances is in the immediate area, and the storage is in limited quantities for immediate use, the area is not precluded from being a CERFA Parcel.

- ★ Nonleaking equipment containing less than 50 parts per million PCBs does not preclude an area from becoming a CERFA Parcel. Nonleaking, out-of-service equipment with greater than 50 parts per million PCBs will place an area in the CERFA Parcel with Qualifier category. An area is designated CERFA Disqualified if there is a known release containing greater than 50 parts per million PCBs.
- ★ Areas where there are transport systems or equipment that handle hazardous substances or petroleum products and on which there has been no release, storage, or disposal of these substances are categorized as CERFA Parcels.
- ★ Ordnance disposal locations are designated CERFA Disqualified. This does not include ordnance impact areas that are designated CERFA Parcels with Qualifiers.
- ★ Routine pesticide and herbicide application in accordance with manufacturer's directions and chlorofluorocarbons and halon in operational systems do not preclude an area from becoming a CERFA Parcel.
- ★ Coal storage piles and railroad tracks do not automatically preclude an area from becoming a CERFA Parcel.

State and Federal (where applicable) comments on the draft CERFA Report were incorporated into the final CERFA Report. These comments are provided in Appendix C.

5.1 PARCEL DESIGNATION MAPS

Table 5-1 and Figure 5-1 identify the breakdown of Nike Battery Kansas City 30 property according to the criteria for parcel identification under CERFA. Appendix D contains the data base from which Table 5-1 and Figure 5-1 are generated.

5.2 TRACT MAP

The property boundaries and all property transfers including prior ownership information is shown in Figure 5-2.

5.3 SUMMARY CERFA MAPS

Figure 5-3 summarizes the breakdown of Nike Battery Kansas City 30 property according to the criteria for parcel identification under CERFA.

TABLE 5-1. Parcel Descriptions, Nike Battery Kansas City 30

PARCEL NUMBER	APPROX. SIZE (ACRES)	COORD (X,Y) ON FIG 5-1	LOCATION	CATEGORY	BASIS	APP. A REF(S)	REMEDATION OR MITIGATION
1P	1	(9,8)		CERFA Parcel	No hazardous substances or petroleum products have been stored, released or disposed in this area.		
2D-A/P/PP/P/HR	2	9,7	Construction/Demolition Debris	Qualified, Asbestos (P)	Asbestos Containing Material	1,2	Disposed on approved smaller than reported in National Preliminary Assessment during CERFA visit
				Disqualified, Hazardous Substance Release	Release of Asbestos associated with Construction/Demolition debris disposed site	1,2,11,226	
				Disqualified, Petroleum Release (P)	1995-1998 - Release of Total Petroleum Hydrocarbons associated with Former Sewage Treatment Plant Outfall	1,2	Discontinued in 1998, possible sources are debris from building
				Disqualified, Hazardous Substance Release (P)	1995-98 - Release of Acids, solvents, oils, metals associated with Former Sewage Treatment Plant Outfall	1,2	Discontinued outfall in 1998, possible source battery room in same lot
				Disqualified, Petroleum Release (P)	1995-1998 - Release of Total Petroleum Hydrocarbons associated with Former Sewage Treatment Plant Outfall	1,2	Discontinued Outfall in 1998
3P	2	(3,5)		Disqualified, Hazardous Substance Release (P)	1995-1998 - Release of Metals and Volatile Organic Compounds (VOCs) associated with Former Sewage Treatment Plant Outfall	1,2	Discontinued Outfall in 1998
				CERFA Parcel	No hazardous substances or petroleum products have been stored, released or disposed in this area.		
4D-A/L/PP/PS/HR/HS	8	5,4	Building S3001	Qualified, Lead (P)	Lead-based paint associated with structure built in 1958	1,2	Removed approximately 1993
				Qualified, Asbestos	Asbestos Containing Material	1,2,20	
		4,4	Building S3003	Qualified, Lead	Lead-based paint associated with structure built in 1958	1,2,19	
				Disqualified, Petroleum Storage	#2 Fuel Oil stored in ~1200 Gallons UST - Used from ~1959 to 1993 (Tank 48)	1	
		5,5	Building S3004	Disqualified, Hazardous Substance Storage (P)	Unknown stored in 5 Gallon Drum - First used in ~1958 (Unidentified Material)		
				Qualified, Asbestos	Asbestos Containing Material	1,2,20	Removed approximately 1993
		4,4	Building S3005	Qualified, Lead	Lead-based paint associated with structure built in 1958	1,2,19	
				Disqualified, Petroleum Storage	Various PCB Products stored in < 30 Gallons (Bar) Can - Used from 1959 (Bar) to 1968 (Bar) (Unidentified Can)	21	Canister is currently empty
		4,5	Building S3006	Disqualified, Petroleum Storage	#2 Fuel Oil stored in 1200 Gallon UST - Used from 1959 to 1968 (Tank 48)	1,2,13,16,17,21	Removed approximately 1993
				Disqualified, Hazardous Substance Storage (P)	Various Hazardous Materials stored in < 30 Gallons (Bar) Can - Used from 1959 (Bar) to 1968 (Bar) (Unidentified Can)	21	Canister is currently empty
				Qualified, Asbestos	Asbestos Containing Material	1,2,20	Removed UST approximately 1993, 30 CY excavated and removed, making debris available from adjacent
				Disqualified, Lead	Lead-based paint associated with structure built in 1958	1,2,19	Removed approximately 1993, 30 CY excavated and removed
				Disqualified, Petroleum Release	1720913 - Release of #2 Fuel Oil associated with Overfill/Leak from Tank 4A	1,2,13,16,17,21	
				Disqualified, Petroleum Storage	#2 Fuel Oil stored in 2500 Gallon UST - Used from 1959 to 1968 (Tank 4A)	1,2,13,16,17,21	

TABLE 5-1. Parcel Descriptions, Nike Battery Kansas City 30

PARCEL NUMBER	APPROX. SIZE (ACRES)	COORD (X,Y) ON FIG 5-1	LOCATION	CATEGORY	BASIS	APP. A REF(S)	REMEDIAL ACTION OR MITIGATION
4D-AU/PN/PS/HR/HS	8	4.5	Building S3006	Disqualified, Hazardous Substance Storage	Various Paints & Paint Solvents stored in < 30 Gallons (B4Q) Can - Used from 1980 (B4Q) to 1988 (B4Q) (Battery Room Paint Loaders) Battery Acid stored in < 12 Gallons Can - Used from 1983 to 1988 (Battery Room)	2 1,2	Lead-based paint removed No longer in operation
		3.3	Building S3007	Qualified, Asbestos (P) Qualified, Lead (P) Disqualified, Petroleum Release	Asbestos Containing Material Lead-based paint associated with structure built in 1958 1/29/93 - Release of Diesel Oil associated with Overfill/Leak from Tank 6G	22b 1,2 17,21,22b	Removed UST approximately 1993. 20 CY contaminated soil excavated, sending debris to landfill. Lead-based paint removed. Asbestos removed. 1993. 20 CY contaminated soil excavated.
			Building S3008	Disqualified, Petroleum Storage Qualified, Asbestos (P) Qualified, Lead (P) Disqualified, Petroleum Storage	Diesel Oil stored in 3000 Gallon UST - Used from 1959 to 1988 (Tank) Asbestos Containing Material Lead-based paint associated with structure built in 1958 Various POL Products stored in < 30 Gallons Can - Used from 1969 to 1974 (Former POL/Paint Loader (Location 1)) Various Paints and Paint Solvents stored in < 30 Gallons (B4Q) Can - Used from 1969 to 1974 (Former POL/Paint Loader (Location 1))	22b 1,2 1,2 1,2	Lead-based paint removed. Asbestos removed. 1994. moved to Location 2 (S3013). Time of movement undetermined. Lead-based paint removed. Asbestos removed. 1994. moved to Location 2 (S3013). Time of movement undetermined.
		4.5	Building S3010	Qualified, Asbestos (P) Qualified, Lead (P)	Asbestos Containing Material Lead-based paint associated with structure built in 1970 (B4Q)	22b 1,2	Removed UST approximately 1993. 200 CY contaminated soil excavated, sending debris to landfill. Lead-based paint removed. Asbestos removed. 1993. 200 CY contaminated soil excavated, sending debris to landfill.
			Building S3012	Qualified, Asbestos (P) Qualified, Lead (P) Disqualified, Petroleum Release	Asbestos Containing Material Lead-based paint associated with structure built in 1970 (B4Q) 1/29/93 - Release of MGOAS associated with Overfill/Leak from Tank 6F 1983-1988 - Release of Oil, grease, antifreeze associated with Vehicle Wash & Direct Disposal MGOAS stored in 3000 Gallon UST - Used from 1969 to 1988 (Tank 6F)	22b 1,2 17,21,22b 1,2 1,2,13,16,17,21	Removed UST approximately 1993. 200 CY contaminated soil excavated, sending debris to landfill. Lead-based paint removed. Asbestos removed. 1993. 200 CY contaminated soil excavated, sending debris to landfill. Lead-based paint removed. Asbestos removed. 1993. 200 CY contaminated soil excavated, sending debris to landfill.
				Disqualified, Petroleum Storage	Diesel Oil stored in 1200 Gallon AGT - Used from 1970 to 1988 (Tank) Various POL Products stored in Drums - Used from 1970 to 1988 (Main POL Storage) 1983-88 - Release of Waste oil & solvents associated with Vehicle Wash & Direct Disposal	1,2 1 1,2	Building vacated in 1988 Discontinued vehicle washing in 1988 and asbestos, possibly polychlorinated biphenyls (PCBs) solvents disposed in 1973 Removed tank 1993; 200 CY contaminated soil excavated, sending debris to landfill. Building vacated in 1988 Discontinued use of area in 1973
				Disqualified, Hazardous Substance Release	1/29/93 - Release of Lead, MGOAS associated with Overfill/Leak from Tank 6F	17,21,22b	Removed tank 1993; 200 CY contaminated soil excavated, sending debris to landfill. Building vacated in 1988
				Disqualified, Hazardous Substance Storage	Various Hot Mix (Solvents, Antifreeze, Oil) stored in Drums - Used from 1970 to 1988 (Antifreeze Hot Mix Storage Area) Waste Oil & Solvents stored in Drums - Used from 1959 to 1973 (Outdoor Hot Mix/Waste Storage Area)	1 2	Removed tank 1993; 200 CY contaminated soil excavated, sending debris to landfill. Building vacated in 1988 Discontinued use of area in 1973
		4.6	Building S3013	Disqualified, Petroleum Storage	Various POL Products stored in < 30 Gallons Can - Used from 1970 to 1988 (Former POL Storage Container)	1,2	Common removed in 1988
			Building S3014	Disqualified, Petroleum Storage Disqualified, Hazardous Substance Storage	Various POL Products stored in < 30 Gallons (B4Q) Can - Used from 1970 (B4Q) to 1980 (Former POL/Paint Storage Shed) Various Paints & Paint Solvents stored in < 30 Gallons (B4Q) Can - Used from 1970 (B4Q) to 1980 (Former POL/Paint Storage Shed)	1,2 1,2	Shed vacated 1989 (Antifreeze), shed removed after 1990 Shed vacated 1989 (Antifreeze), shed removed after 1990
		2.3	Building S3015	Disqualified, Petroleum Storage (P)	Various POL Products stored in < 30 Gallons (B4Q) Can - Incorporated in 1974 (Former POL/Paint Loader (Location 2))	1,2	Lead-based paint removed after 1990. Original located West side of Bldg 3008, Loc 1. Possibly empty when at Location 2.
				Disqualified, Hazardous Substance Storage (P)	Various Paints & Paint Solvents stored in < 30 Gallons (B4Q) Can - Incorporated in 1974 (Former POL/Paint Loader (Location 2))	1,2	Lead-based paint removed after 1990. Original located West side of Bldg 3008, Loc 1. Possibly empty when at Location 2.
		3.3	Building S3028	Qualified, Asbestos (P)	Asbestos Containing Material	22b	Lead-based paint removed after 1990. Original located West side of Bldg 3008, Loc 1. Possibly empty when at Location 2.

TABLE 5-1. Parcel Descriptions, Nike Battery Kansas City 30

PARCEL NUMBER	APPROX. SIZE (ACRES)	COORD (X,Y) ON FIG 5-1	LOCATION	CATEGORY	BASIS	APP. A REF(S)	REMEDICATION OR MITIGATION
4D-1A/PP/PS/HR/HS	8	3,3	Building S3022	Qualified, Lead (P) Disqualified, Petroleum Release	Lead-based paint associated with structure built in 1970 (2A) 1975-1975 - Release of Oil associated with Overfill/Leak from Tank 46	1,2 17,21,22b	Removal UST approximately 1981. 20 CY asbestos contained in tank removed. Tank removed approximately 1981. 20 CY contaminated soil removed.
		4,6	Former Oil Storage Area	Disqualified, Petroleum Release	1975-1988 - Release of Oil associated with Former Oil Storage Area	1,2	Discontinued activities in area in 1988, resulting in no further release during CERCLA site visit.
				Disqualified, Petroleum Storage	Various POL Products stored in < 165 Gallons Drum - Used from 1975 to 1980 (Former Oil Storage Area)	1,2	Discontinued activities in area in 1988, resulting in no further release during CERCLA site visit.
				Disqualified, Hazardous Substance Release	1975-1988 - Release of Waste oil & solvents associated with Former Oil Storage Area	1,2	Discontinued activities in area in 1988, resulting in no further release during CERCLA site visit.
				Disqualified, Hazardous Substance Storage	Waste Oil & Solvents stored in < 165 Gallons Drum - Used from 1975 to 1980 (Former Oil Storage Area)	1,2	Discontinued activities in area in 1988, resulting in no further release during CERCLA site visit.
		3,3	Former Small Arms Practice Range	Disqualified, Hazardous Substance Release	Waste Oil stored in 250 Gallons AUT - Used from 1981 to 1984 (Tank 46)	1,2	Truck removed in 1988
		3,6	Former Waste Oil Disposal Area	Disqualified, Hazardous Substance Release	1959-88 (2A) - Release of Lead associated with Former Small Arms Practice Range	1,2,21,22b	Activities discontinued in 1988 (Substance)
5P	2	(3,6)		CERCLA Parcel	1959-1975 - Release of Oil associated with Former Waste Oil Disposal Area	1,2	Discontinued activities in area in 1975, resulting in no further release during CERCLA site visit.
6P	1	(9,5)		CERCLA Parcel	1959-1975 - Release of Waste oil & solvents associated with Former Waste Oil Disposal Area	1,2	Discontinued activities in area in 1975, resulting in no further release during CERCLA site visit.
7D-1A/PP/PP/PPR	1	9,4	Building S3002	Qualified, Asbestos (P) Qualified, Lead (P) Disqualified, Petroleum Release	Asbestos Containing Material Lead-based paint associated with structure built in 1958 1975-1975 - Release of Oil associated with Air Compressor/Water Pump Oil Tanks	22b 1,2 21	Release contained inside building
8P	3	(4,3)		CERCLA Parcel	No hazardous substances or petroleum products have been stored, released or disposed in this area.		

D=CERFA DISQUALIFIED PARCEL
 E=CERFA EXCLUDED PARCEL
 P=CERFA PARCEL
 Q=CERFA PARCEL WITH QUALIFIERS
 A=ASBESTOS
 L=LEAD-BASED PAINT
 P=PCB STORAGE
 R=RADON
 RD=RADIATION/CLIDES
 X=UNEXPLODED ORDNANCE
 PR=PETROLEUM RELEASE
 PS=PETROLEUM STORAGE
 HR=HAZARDOUS SUBSTANCE RELEASE
 HS=HAZARDOUS SUBSTANCE STORAGE
 (P)=POSSIBLE QUALIFIER

FIGURE 5-1
PARCEL DESIGNATION MAP, NIKE
BATTERY KANSAS CITY 30,
PLEASANT HILL, MISSOURI

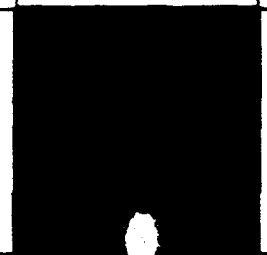
①

REVISION	DATE
0	12/10/83
1	04/14/84

10

JACKSON COUNTY
CASS COUNTY

9



8

7

6

WASTE OIL
DISPOSAL AREA

FORMER
STORAGE



5

3

2

I COUNTY
JUNTY

Section 31

T 46 N, R 29 W, 1

One Acre Grid Square
Coordinate Location: (2,9)

DEI

FORMER OIL
STORAGE AREA

WEST PARCEL

SEWAGE
TREAT
PLANT

AREA

5P

2D-/A(P)/PR(I

3P

Building

3

Section 31

T 46 N, R 29 W, NE Corner of Section 6

EAST PARCEL

1P

DEBRIS AREA

SEWAGE
TREATMENT
PLANT
OUTFALL

SEWAGE
TREATMENT
PLANT

-/A(P)/PR(P)/HR

6P

4

DEBRIS AREA



Study Area Currently Under Investigation



Hazardous Substance Storage or Waste Accumulation Area



Underground Storage Tank



Above Ground Storage Tank



Demolished/Removed Building



County Line



Section Boundary



BRAC Property Boundary



CERFA Parcel



CERFA Parcel with Qualifiers



CERFA Disqualified Parcel



CERFA Excluded Parcel

6

5

4

3

2

1

1

2

3

4

5

FORMER OIL
STORAGE AREA

WASTE OIL
DISPOSAL AREA

WEST PA

5P

3P

8P

SMALL ARMS
FIRING RANGE

ing 83007

ing 83010

ing 83088

(5)

PARCEL LABEL DEF

13P- /A/L

A =
L =
P =
R =
X =
RD =

CENTE

WEST PARCEL

SEWAGE
TREATMENT
PLANT

5P

2D-/A(P)/PR(P)/HR

6P

7D-/A(P)/L(P)/PR

WATER
TREATMENT
PLANT

CONTROL AREA DRIVE

8P

HIGHWAY KK

ARMS
RANGE

5

6

7

8

9

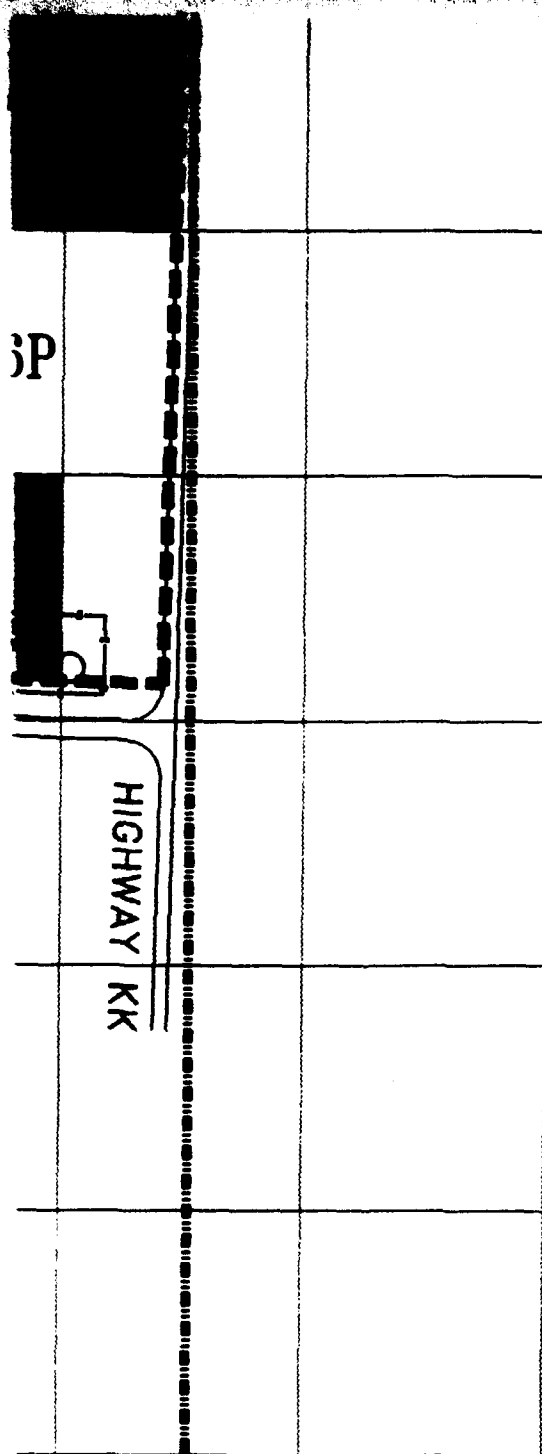
10

PARCEL LABEL DEFINITIONS

13P-/A/L

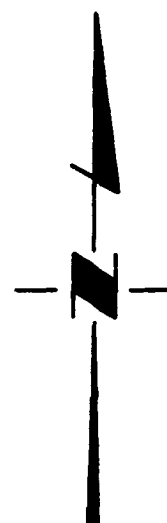
A = ASBESTOS
L = LEAD-BASED PAINT
P = PCB
R = RADON
X = UNEXPLODED ORDNANCE
RD = RADIONUCLIDES
OR = PETROLEUM RELEASE

6



CERFA Disqual

CERFA Exclud



SCALE IN FEET

10

11

(7)

 *The Earth Technology Corporation*

1420 KING STREET SUITE 600, ALEXANDRIA, VA 22304

FIGURE 5-
PARCEL DESIGNATION

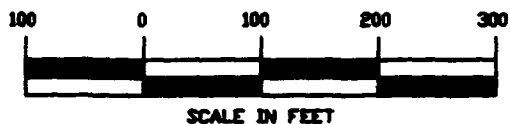
NIKE BATTERY KANGAROO



CERFA Disqualified Parcel



CERFA Excluded Parcel



*The Earth Technology
Corporation*

1420 KING STREET SUITE 600, ALEXANDRIA, VIRGINIA 22314

FIGURE 5-1
PARCEL DESIGNATION MAP
NIKE BATTERY KANSAS CITY 30.

8

2

1

1

2

3



Source: CERFA Investigation, April 1994

9

SMALL ARMS
FIRING RANGE

2

3

4

5

6

7

8

PARCEL LABEL DEFINITIONS

13P- /A/L

A = ASBESTOS
L = LEAD-BASED PAINT
P = PCB
R = RADON
X = UNEXPLODED ORDNANCE
RD = RADIONUCLIDES
PR = PETROLEUM RELEASE
PS = PETROLEUM STORAGE
HR = HAZARDOUS SUBSTANCE RELEASE
HS = HAZARDOUS SUBSTANCE STORAGE
(P) = POSSIBLE QUALIFIER

P = CERFA PARCEL
Q = CERFA PARCEL WITH QUALIFIER(S)
D = CERFA DISQUALIFIED PARCEL
E = CERFA EXCLUDED PARCEL

PARCEL NUMBER

1994

10



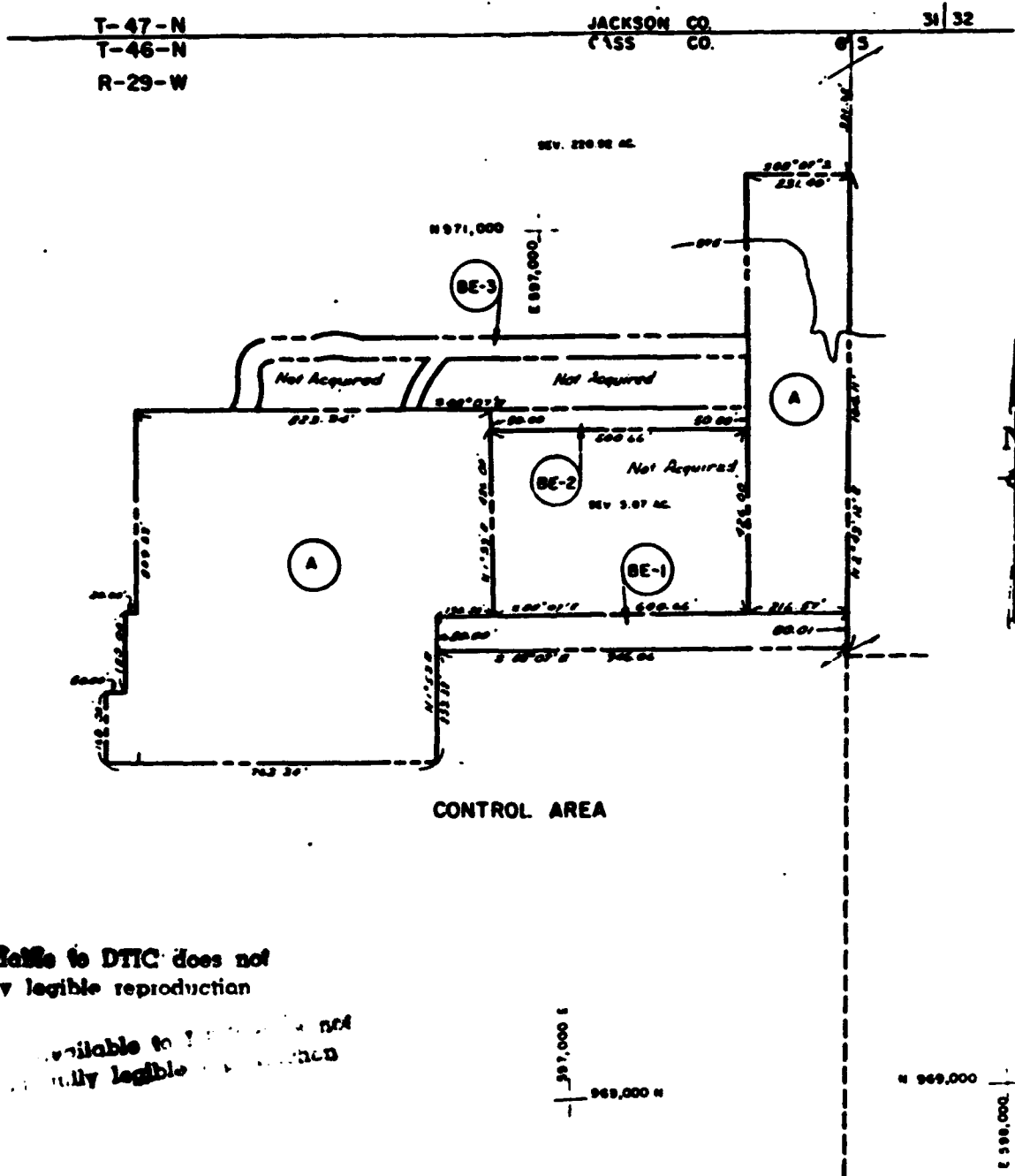
1420 KING STREET SUITE 600, ALEXANDRIA, VIRGINIA 22314

FIGURE 5-1
PARCEL DESIGNATION MAP
NIKE BATTERY KANSAS CITY 30,
PLEASANT HILL, MISSOURI

DRAWN BY: MTM, JGC	DESIGNED BY: N/A	SCALE: 1" = 162'
CHECKED BY: SH	APPROVED BY: BY	DATE: 04/14/94
TETC PROJECT NUMBER 931977-10	DRAWING NUMBER SHEET <u>1</u> OF <u>1</u>	REV. NO. 1

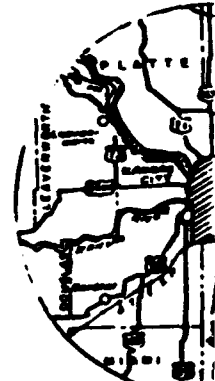
11

FIGURE 5-2
TRACT MAP, NIKE BATTERY KANSAS CITY
30, PLEASANT HILL, MISSOURI



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2

TRACT REGISTER OF ACQUISITION AFTER 1 JULY 1940

TRACT NO.	LAND OWNER	ACREAGE			REMARKS
		FEE	EASMT		
A	DEPT OF THE ARMY	19.06			REASSIGNED FR KC DEFENSE NO, EFF 11-21-72
BE-1	DEPT OF THE ARMY (JOHN W. ROBERTSON, ET AL)		1.77		PROP 3225 RD R/W ESMY, A DEFENSE, NICE BAYWAY SO, A
BE-2	"		0.69		PROP UTILITY LINES ESMY, REO DEFENSE, NICE BATTERY SO, A
BE-3	DEPT OF THE ARMY (GEORGE M. ROBERTSON, ET AL)		1.56		PROP FLOODING ESMY, REASSIGN NICE BATTERY SO, NO, A

31/32



969,000

E 588,000

ACQUISITION AU

STATE INDEX

FINAL

PROJECT MAP

USING SERVICE NATIONAL GUARD

LOCATION OF PROJECT

9 MILES NE OF PLEASANT HILL

TRANSPORTATION FACILITIES

AIR LINES

ACQUISITION

LESSER INTERESTS	_____
EASM'T (3)	4.02

DISPOSAL

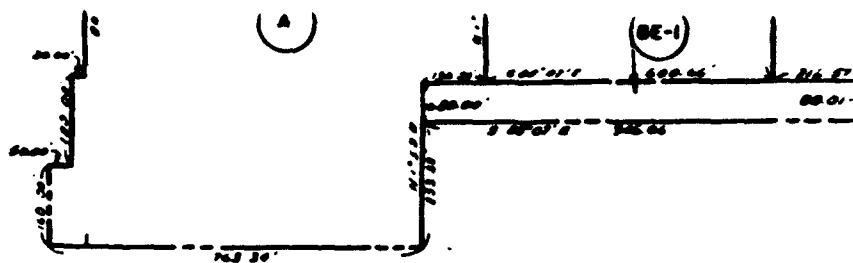
OTHER

LEGEND

ACQUISITION AUTHORIZATION

RESERVATION LINE

Copy available to interested parties upon request.



CONTROL AREA

100,000
949,000 N

SE CORNER
N 1/2 SEC

NOTE

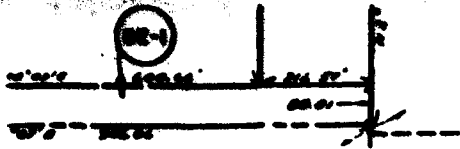
The boundary of this reservation and cultural and historical features were compiled from actual survey furnished by Black and Veatch, Consulting Engineers, Kansas City, Mo. Drawings Nos. 13-02-01 (Sheet 2), SKC 30-101, and SKC 30-102.

Bearings are based on Missouri State Plane Coordinate System, West Zone.

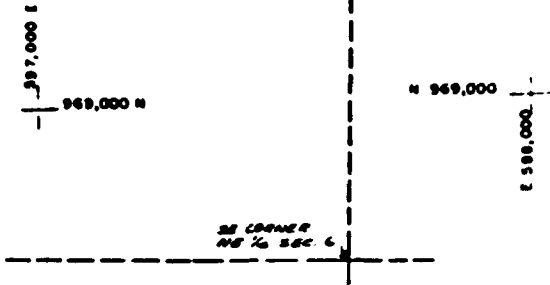
Vertical Datum is Mean Sea Level.

4

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AREA



VICINITY MAP



STATE INDEX

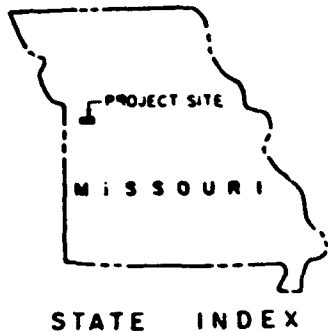
original and
actual survey
of Engineers,
D (Sheet 2),

• Plans

M	12-17-59	5-2-77	JUL 17 - 1977
DATE AND TIME	APPROVED	DATE	REVISIONS

5

Can be available to DTIC de
fully legible report



DISPOSAL

TOTAL ACRES DISPOSED OF

SOLD _____
 PUBLIC DOMAIN ☐ WITHDRAWAL _____
 ☐ USE PERMIT _____
 USE PERMIT (OTHER THAN P. B.) _____
 TRANSFERRED _____
 LEASES TERMINATED _____
 LESSER INTERESTS TERM _____
 REASSIGNED _____
 OTHER _____

LEGEND

EXCEPT FOR THE SPECIAL SYMBOLS SHOWN BELOW ALL SYMBOLS ARE STANDARD IN ARMY MAP SERVICE TECHNICAL MANUAL NO. 22.

ACQUISITION AUTHORIZATION

21 NOV '72 (DD FORM 1354)

RESERVATION LINE _____
 RESERVATION LINE (Actual Survey) _____
 TRACT BOUNDARY LINE _____
 TRACT NUMBER _____
 CONTOUR LINE _____
 DISPOSAL _____
 EXTENDED OWNERSHIP LINE _____

DEPARTMENT OF THE ARMY
 OFFICE OF THE KANSAS CITY DISTRICT ENGINEER
 MISSOURI RIVER DIVISION

REAL ESTATE
 KANSAS CITY DEFENSE AREA
 NIKE-30
 NATIONAL GUARD TRAINING AREA
 MILITARY RESERVATION

DRAWN BY: *H. P. L.*
 TRACED BY: *H. P. L.*
 CHECKED BY: *G. H. L.*

SUBMITTED BY:
R. L. L.
 CHIEF, REAL ESTATE SECTION

RECOMMENDED BY:
R. L. L.
 CHIEF, PLANNING AND CONTROL BRANCH

APPROVED BY: *B. L. L.* DATE: 11 April 72

OFFICE CHIEF OF ENGINEERS, WASHINGTON, D. C. 20314

AUDITED

INSTALLATION OR PROJECT NO. -C-1-002

SCALE IN FEET

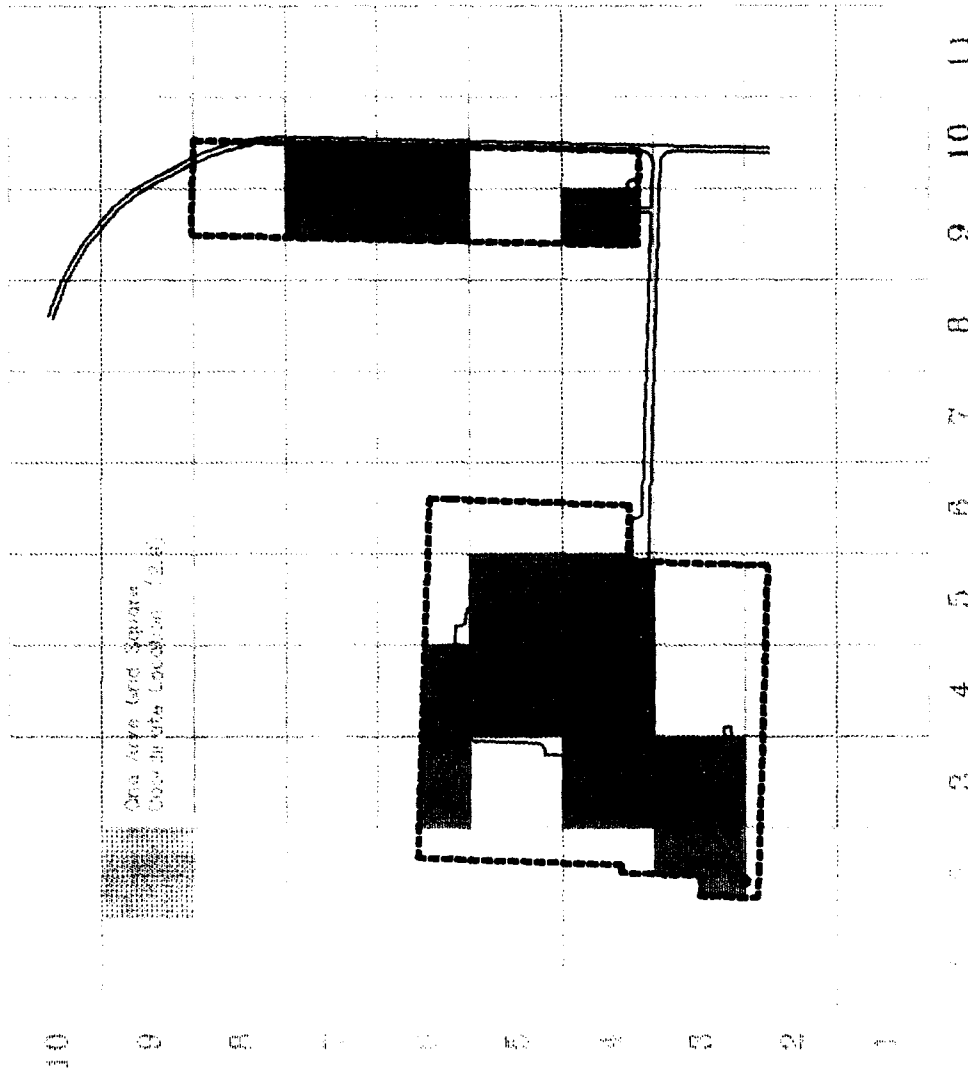
100 200 300 400 500 600 700 800 900 1000

SHEET 1 OF 1 DRAWING NO. MQ-72

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 permit fully legible reproduction

FIGURE 5-3
SUMMARY CERFA MAP, NIKE BATTERY
KANSAS CITY 30, PLEASANT HILL,
MISSOURI

REVISION	DATE
0	12/1
1	04/14/94



One Acre Land Square
Over In the Location (2.0)

- BRAC Property Boundary
- CERFA Parcel
- CERFA Parcel with Qualifiers
- CERFA Disqualified Parcel
- CERFA Excluded Parcel

The Earth Technology Corporation

1400 WEST STREET SUITE 200, ALBUQUERQUE, NEW MEXICO 87104

**FIGURE 5-3
SUMMARY CERFA MAP
NIKE BATTERY KANSAS CITY 30,
PLEASANT HILL, MISSOURI**

DESIGNED BY: JDC	DESIGNED ON: N/A	DATE: 04/14/94
CHECKED BY: SH	APPROVED BY: [Signature]	DATE: 04/14/94
PROJECT NUMBER: 931677-10	PROJECT NAME: NIKE BATTERY	SCALE: 1" = 1.0



A P P E N D I X A
REFERENCE LIST FOR
NIKE BATTERY KANSAS CITY 30
FACILITY

APPENDIX A

REFERENCE LIST FOR NIKE BATTERY KANSAS CITY 30 FACILITY

	Document	Date	Source
1.	Enhanced Preliminary Assessment Report: Nike Battery Kansas City 30 Pleasant Hill, Missouri, Roy F. Weston, Inc.	December 1989	USAEC
2.	Final Sampling Design Plan: Environmental Investigation/Alternative Analysis at Nike Battery Kansas City 30 Missouri, Dames & Moore	July 20, 1990	USAEC
3.	Installation Assessment Army Base Closure Program, U.S. Environmental Protection Agency (Aerial Photographs)	April 1990	USAEC
4.	Real Estate Tract Register, Real Estate Division, U.S. Army		USAEC
5.	Real Estate Tract Map, Real Estate Division, U.S. Army		USAEC
6.	Fact Sheet, Nike Battery Kansas City 30, USAEC	June 1993	USAEC
7.	Correspondence, Ardel W. Rueff (Missouri Department of Natural Resources) to Mel Stanford (Department of the Army, Corps of Engineers) Regarding Mineral Resources at Nike Battery Kansas City 30	July 19, 1993	DOA, ACE, Realty
8.	Department of the Army Lease for Agricultural or Grazing Purposes at Nike Battery Kansas City 30	January 5, 1989	DOA, ACE, Realty
9.	Department of the Army Easement for Road or Street, Nike Battery Kansas City 30	August 22, 1961	DOA, ACE, Realty
10.	Wetlands Delineation, Nike Battery Kansas City 30, Department of the Army	July 20, 1993	DOA, ACE, Realty
11.	Notification of Hazardous Waste Activity at Nike Battery Kansas City 30 and Related Correspondence, Department of the Army, Fort Leavenworth	July 20, 1992	Fort Leavenworth
12.	Notification of Receipt of Notification of Hazardous Waste Activity at Nike Battery Kansas City 30, Missouri Department of Natural Resources	September 30, 1992	Fort Leavenworth
13.	Correspondence, Phillip N. Garlito (Fort Leavenworth) to James Harris (Missouri Department of Natural Resources) Regarding Underground Storage Tank Closure at Nike Battery Kansas City 30	February 11, 1993	Fort Leavenworth
14.	Notification of Polychlorinated Biphenyl Activity and Related Correspondence at Nike Battery Kansas City 30, Fort Leavenworth, Kansas	November 23, 1992	Fort Leavenworth
15.	Environmental Assessment for Disposal of the Nike Battery, Kansas City 30, U.S. Army Corps of Engineers, Mobile District	October 1990	Fort Leavenworth
16.	Notification for Underground Storage Tanks at Nike Battery Kansas City 30, Fort Leavenworth	January 22, 1993	Fort Leavenworth

APPENDIX A

REFERENCE LIST FOR

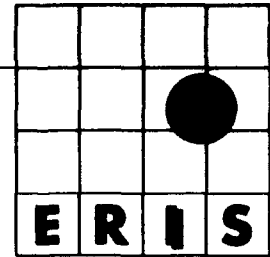
NIKE BATTERY KANSAS CITY 30 FACILITY

Document	Date	Source
17. Telephonic Notifications of Pollution Incident, Nike Battery Kansas City 30	January 29, 1993	Fort Leavenworth
18. Memorandum For Record, Removal of Transformers at Nike Battery Kansas City 30, Richard Wilms, Fort Leavenworth	October 27, 1992	Fort Leavenworth
19. Lead-Based Paint Sample Analysis Results, Nike Battery Kansas City 30	October 22, 1993	Fort Leavenworth
20. Asbestos Sample Analysis Results, Nike Battery Kansas City 30	October 22, 1993	Fort Leavenworth
21. Community Environmental Response Facilitation Act Site Visit	October 25, 1993	Nike KC-30
22. Personnel Interviews	Various	Various
23. U.S. Army Environmental Hygiene Agency Records pertaining to radioactive materials use at CERFA installations.	March 25, 1994	USAEC

Key: USAEC = U.S. Army Environmental Center
 ACE = Army Corps of Engineers
 DOA = Department of the Army
 Nike KC-30 = Nike Battery Kansas City 30

A P P E N D I X B

ERIIS DATA BASE SEARCH REPORT



ENVIRONMENTAL RISK INFORMATION & IMAGING SERVICES REPORT

PERTAINING TO:

**NIKE KANSAS CITY 30
LONE JACK, MO**

ON BEHALF OF:

**THE EARTH TECHNOLOGY
1420 KING STREET
SUITE #600
ALEXANDRIA, VA 22314**

PREPARED ON:

SEPTEMBER 1, 1993

ERIIS REPORT NUMBER:

28669

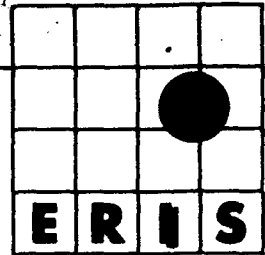
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I. REPORT OVERVIEW

ERIIS Report Overview

The ERIIS Report consists of five (5) basic sections:

- * Digital Custom Plotted Map
- * Database Records
- * Statistical Profile
- * Sanborn Fire Insurance Map(s)
- * Topographical Map

Digital Custom Map

Each site-specific Digital Custom Map is plotted using U.S. Census TIGER Files. The cross in the center of the map represents the study site. The red circle represents the study radius, usually one mile. Reported federal/state hazardous waste and toxic chemical sites are plotted on the map and are easily distinguished by different symbols.

Statistical Profile

The Statistical Profile is an at-a-glance numeric summary of the data included in the ERIIS Report.

Database Records

This section presents detailed federal and state database information for each site within the study radius. Sites are easily located on the digital map by using the number in the MAP ID column of the report.

Note: Many of the sites reported in federal/state databases cannot be plotted due to inaccurate or incomplete addresses (e.g., PO Box number, street name with no number). Still, they are potentially within the study radius. ERIIS reports these sites using progressively broader search criteria to ensure that all potentially relevant hazardous sites are included. All zip codes within and intersected by the study radius are searched, as well as records that simply report the relevant city or county. Where applicable, federal and state database information is further subdivided.

Sanborn Fire Insurance Maps

ERIIS has assembled a collection of Historical Sanborn Fire Insurance Maps covering 14,000 cities and towns. In some cases, however, the ERIIS Report will include a notice that no maps were found. This notice should serve as evidence of due diligence.

Topographic Map

ERIIS provides a topographic map with each report which accurately depicts the natural and man-made features of the land. The shape and elevation of the terrain are represented by contour lines and specific features, such as roads, towns, and vegetation, are portrayed by map symbols and colors. Standard topographic maps are produced at a 1:24,000 scale, or one inch represents 2000 feet.

ENVIRONMENTAL RISK INFORMATION & IMAGING SERVICES

RADIUS REPORT

REPORT NUMBER: 28669

STATE: MO
 LATITUDE: 38.832808
 LONGITUDE: -94.162296
 ZIP CODES SEARCHED: 64034 64080 64070

DATABASE	RADIUS (MILES)	RADIUS REPORTED SITES					NOT RADIUS REPORTED		TOTAL SITES
		Property	Property-1/16	1/16-1/2	1/2-1	>1	ZIP CODE	CITY/COUNTY	
NPL	1.000	NO	0	0	0		0	0	0
CERCLIS	1.000	NO	0	0	0		2	0	2
TRI	1.000	NO	0	0	0		1	0	1
RCRIS_TS	1.000	NO	0	0	0		0	0	0
RCRIS_LG	1.000	NO	0	0	0		1	0	1
RCRIS_SG	1.000	NO	0	0	0		2	0	2
DOCKET	1.000	NO	0	0	0		1	0	1
ERNS	1.000	NO	0	0	0		0	0	0
FINDS	1.000	NO	0	0	0		12	0	12
NUCLEAR		NR	NR	NR	NR	NR	0	0	0
OPENDUMP		NR	NR	NR	NR	NR	0	0	0
UST	1.000	NO	0	0	0		13	0	13
LUST	1.000	NO	0	0	0		0	3	3
SWF		NR	NR	NR	NR	NR	0	11	11
			<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
			0	0	0	0	32	14	46

STATE DATA IN PAPER FORMAT: WASTE GENS., AB&UN SITES, RES. REC.

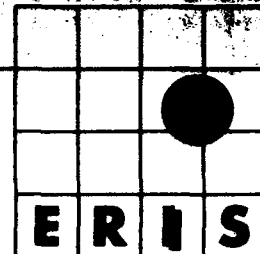
Selection of PROPERTY records requires an accurate street address in the ERIIS job order.

ZIP CODE and CITY/COUNTY sites are not radius reportable due to insufficient and/or inaccurate addresses reported by federal/state agency. These sites are reported within the study site zip code(s) and/or city/county and may be within the study site radius. These sites require further investigation to accurately assess proximity to the study site.

A blank radius count indicates that the database was not searched by this radius per client instructions.

NR in a radius or zip code count indicates that the database cannot be reported by this search criteria due to insufficient and/or inaccurate addresses reported by a federal/state agency.

State data in paper format is sorted using the most specific secondary search criteria available (zip code, city, or county).



II. DIGITAL CUSTOM PLOTTED MAP

Miller Road

Stewart Road

State Hwy E

State Hwy KK

①

ERIIS

1421 Prince Street, Ste 330
Alexandria, VA 22314
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FAX: (703)836-0468

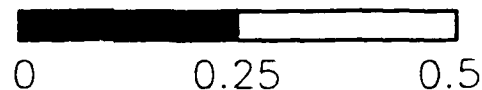
SITE INFORMATION

Nike Kansas City 30
Lone Jack, MO
Jackson County
Job Number: 28669
Map Plotted: Aug 30, 1993

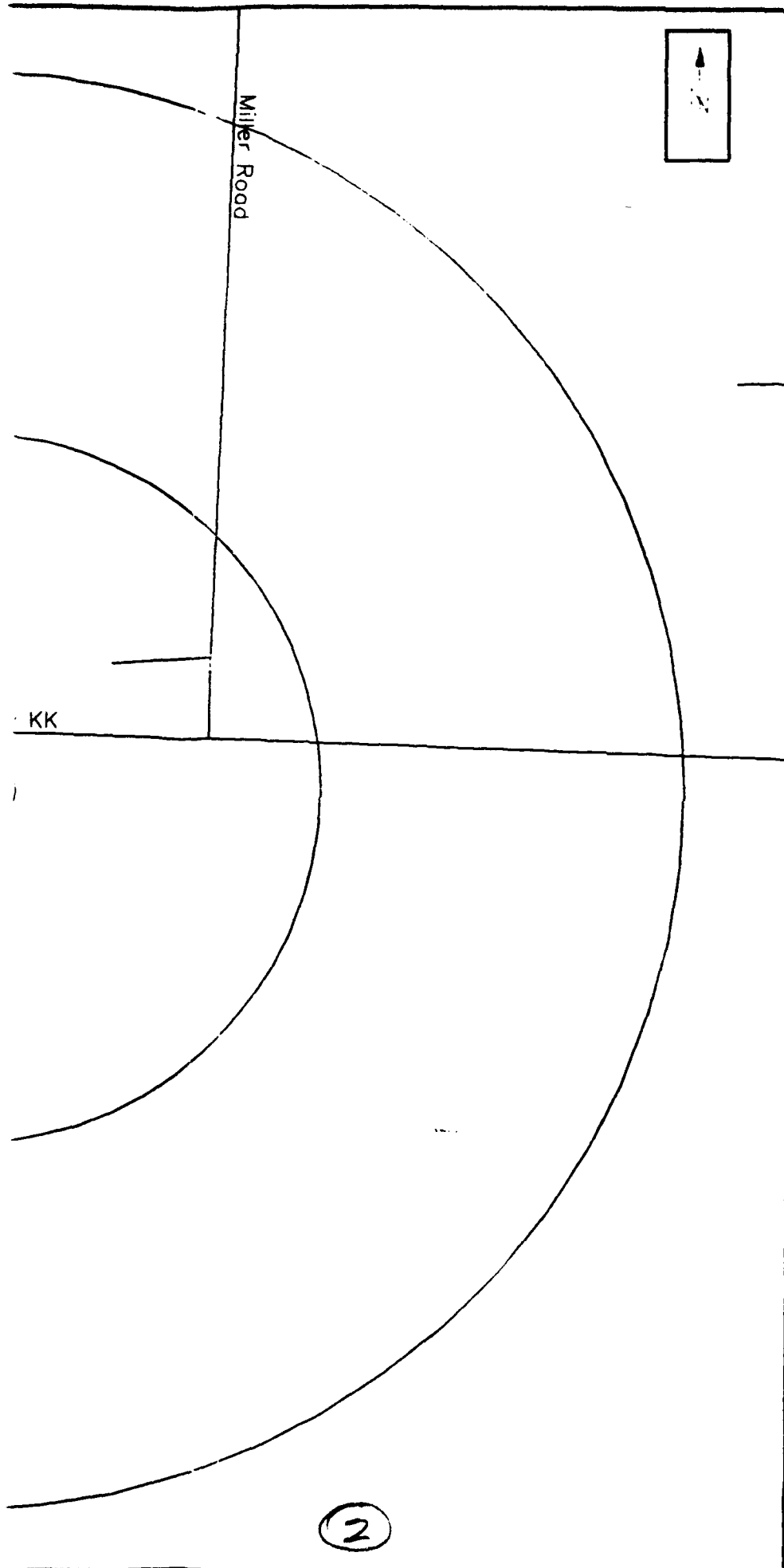
MAP LEGEND

- Hydrography
- ... Railroads
- Roads
- Highways
- CERCLIS 0 Site(s)
- LUST 0 Site(s)
- ☆ NPL 0 Site(s)
- ◇ RCRIS_LG 0 Site(s)
- RCRIS_SG 0 Site(s)
- ⊕ RCRIS_TS 0 Site(s)
- △ TRI 0 Site(s)
- UST 0 Site(s)

Miles



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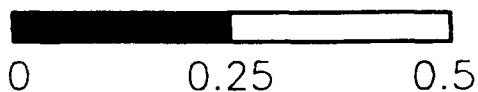
SITE INFORMATION

Nike Kansas City 30
Lone Jack, MO
Jackson County
Job Number: 28669
Map Plotted: Aug 30, 1993

MAP LEGEND

- Hydrography
- Railroads
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- ⊕ RCRIS_TS 0 Site(s)
- △ TRI 0 Site(s)
- UST 0 Site(s)

Miles



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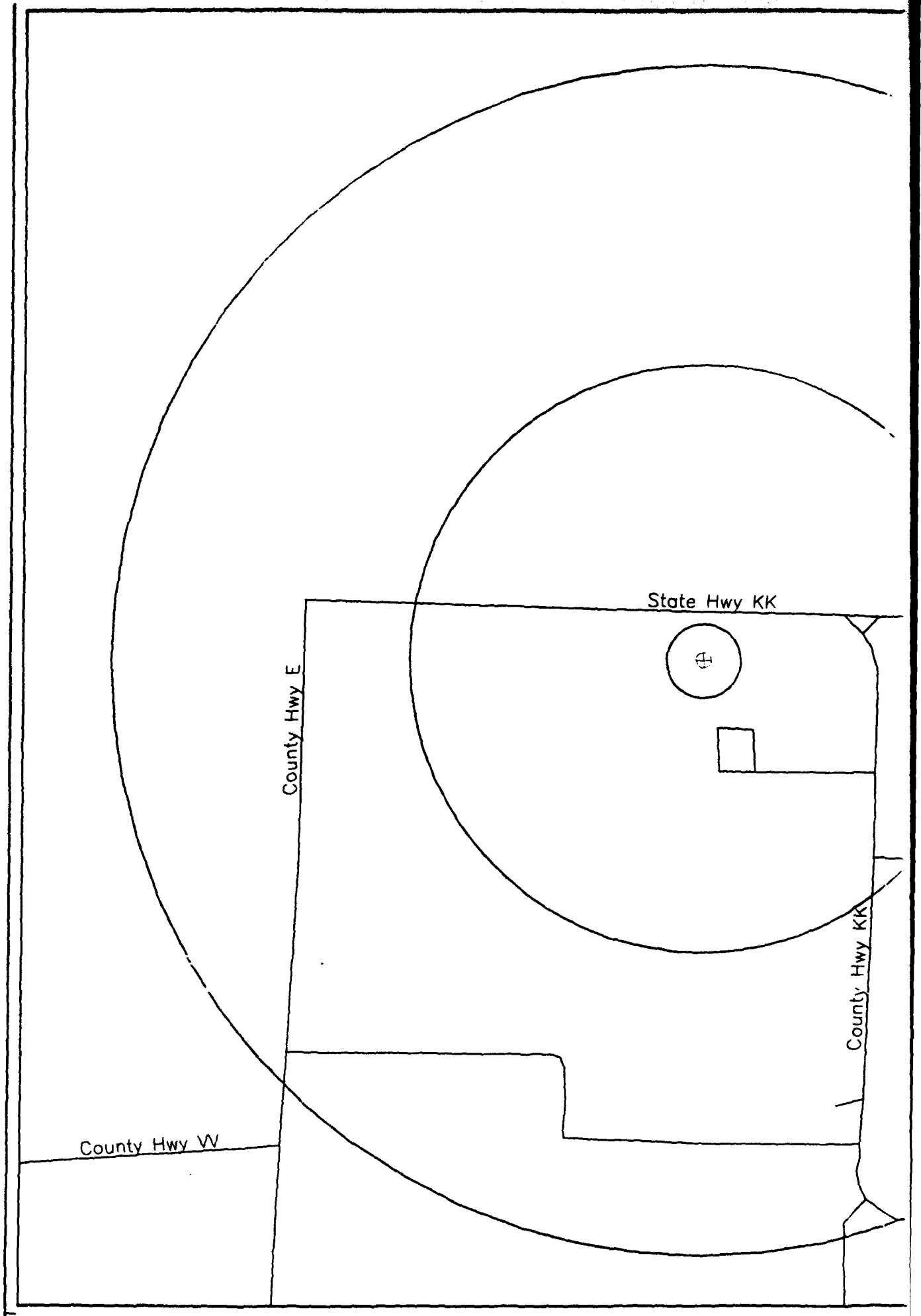
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**1421 Prince Street
Alexandria, VA
(703)836-0402 (800)836-0402
FAX: (703)836-0402**

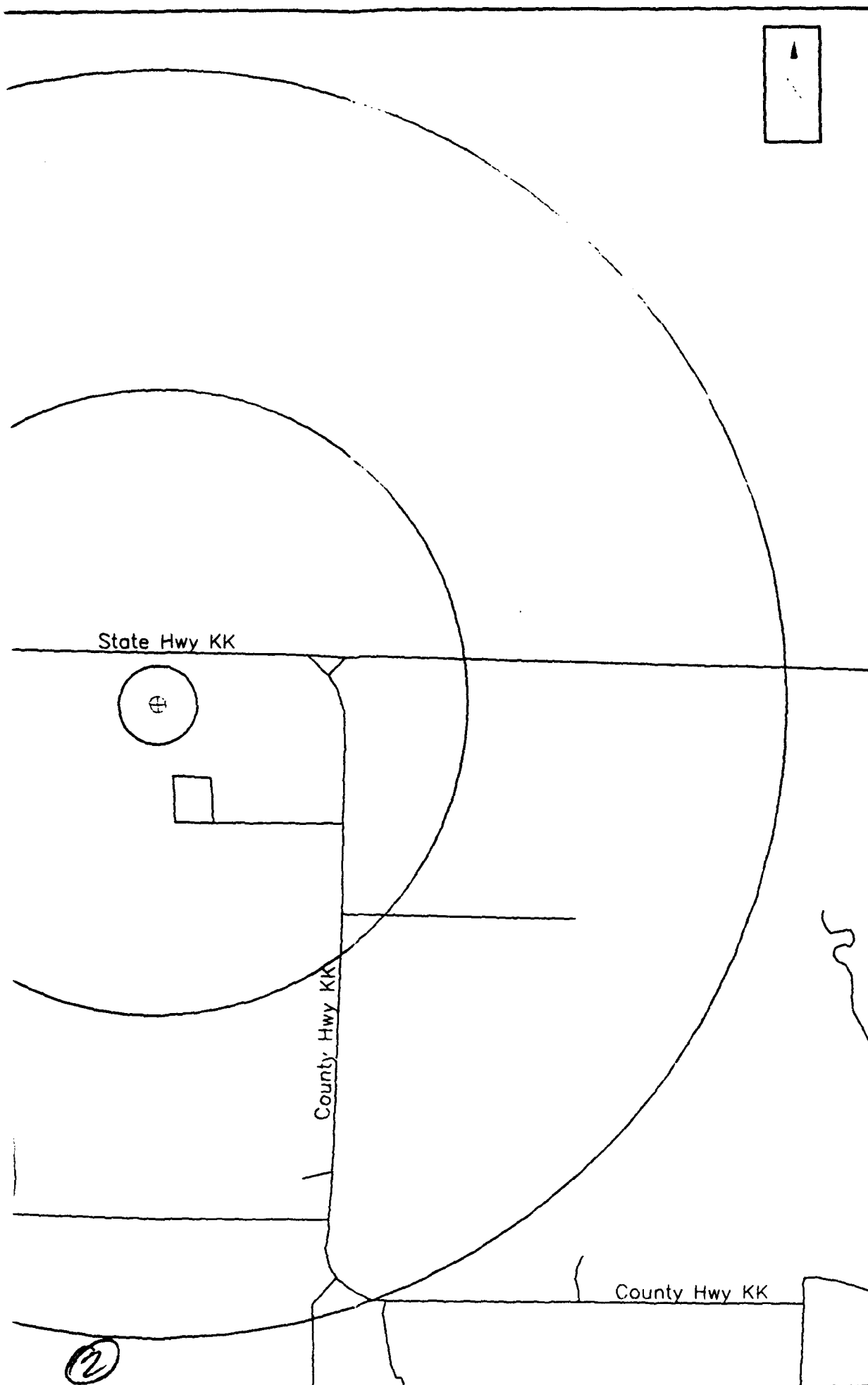
Nike Kansas
Lone Jack,
Cass Co
Job Number:
Map Plotted: Au

- Hydrograph
- Railroads
- Roads
- Highways
- CERCLIS (
- LUST 0 Site
- ☆ NPL 0 Site
- ◇ RCRIS_LG
- RCRIS_SG
- ⊕ RCRIS_TS
- △ TRI 0 Site
- UST 0 Site

Miles



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FAX: (703)836-0468

SITE INFORMATION

Nike Kansas City 30
Lone Jack, MO
Cass County
Job Number: 28669
Map Plotted: Aug 30, 1993

MAP LEGEND

- Hydrography
- Railroads
- Roads
- Highways
- CERCLIS 0 Site(s)
- LUST 0 Site(s)
- ☆ NPL 0 Site(s)
- ◇ RCRIS_LG 0 Site(s)
- RCRIS_SG 0 Site(s)
- ⊕ RCRIS_TS 0 Site(s)
- △ TRI 0 Site(s)
- UST 0 Site(s)

Miles



0 0.25 0.5

Hwy KK

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A P P E N D I X C
REGULATORY COMMENTS TO DRAFT
NIKE BATTERY KANSAS CITY
CERFA REPORT

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES

Missouri Governor - David A. Shafer, Director

DIVISION OF ENVIRONMENTAL QUALITY
P.O. Box 176 Jefferson City, MO 65102-0176

March 3, 1994

Mr. Russell Fendick
Department of the Army
U.S. Army Environmental Center
Base Closure Division
Aberdeen Proving Ground, MD 21010-5401

Dear Mr. Fendick:

On December 20, 1993, the Missouri Department of Natural Resources received copies of the draft Community Environmental Response Facilitation Act (CERFA) Report for Nike - Kansas City 30, along with Mr. Paul E. Wojciechowski's request for the State's review and concurrence.

This Department does not concur with the "CERFA uncontaminated" designation of parcels as identified in the document. While we currently do not have documentation that the parcels are contaminated, we have not seen sufficient justification or documentation to disprove it. The size of the parcels, their proximity to known or suspected areas of contamination, combined with the fact that they are contained within the same fenced area, cause us to come to this conclusion. Reviews were performed by the Hazardous Waste Program, and the Division of Geology and Land Survey, both within the Missouri Department of Natural Resources, in addition to a review performed by the Department of Health.

Enclosed with this letter please find our initial comments presented as both general and specific to various portions of the document. Since the completion of these initial comments, additional information was provided by the Army. We will review and provide any additional comment or revisions by March 23, 1994, as requested.

In addition to reviewing the documents, commenters were provided a tour of the facility by Mr. Steve Lemons and Mr. Gordon Gifford of the Corps of Engineers, Kansas City District. We appreciate the opportunity to comment on these documents and are available to discuss the comments or provide clarification. I request that responses to the comments be provided to my attention.

Sincerely,

HAZARDOUS WASTE PROGRAM

Robert Geller

Robert Geller, Chief
Federal Facilities Section

RG:al

Enclosure

Missouri Department of Natural Resources Comments
NIKE BATTERY - KANSAS CITY 30
February 20, 1994

GENERAL

1. One major factor to be evaluated when identifying parcels as CERFA (clean) for disposal purposes is how can the tract or tracts of land be broken or subdivided in order to dispose of the property if the entire property is not clean. At the NIKE BATTERY - KANSAS CITY 30 (NIKE) site the property owned by the federal government contains two separate tracts of property in the same vicinity which are connected by drainage, utility and road easements. On both tracts, the west parcel (approximately 15 acres) and the east parcel (approximately 5 acres) contamination has been identified previously in the soil and is suspected in the groundwater. On the west parcel, Army has proposed that approximately six acres of the 15 is identified as CERFA/clean; on the east parcel they propose approximately 2.5 acres of the 5 is CERFA/clean.
2. Based on the fact that approximately 60% of the entire area has been identified as contaminated or requires additional investigation by the ARMY, including groundwater, which extends under areas proposed as clean, we recommend that the entire facility for the ease of future disposal and efficient use of Government funds be designated as "CERFA Disqualified Parcels".
3. The authors provided clear information on the purpose of the document and summaries of the CERFA parcel designations. The document was however significantly lacking in descriptions regarding the history of the facility and the various activities of the missions operated there. As a public document it is very helpful to describe the purpose of the facility fully to clearly understand what activities took place, or may have taken place on-site. In addition, it also may clarify what activities did not take place as compared to other similar facilities.
4. The document fails to provide attachments or inclusions regarding all the data that has been collected to date to support any decision. MDNR requests that copies and summaries of recent and past sampling activities be provided.

Missouri Department of Natural Resources Comments
NIKE BATTERY - KANSAS CITY 30
February, 20 1994

SPECIFIC

5. Page 1-3, Section 1.3

There are two typographical errors. The town of Pleasant Hill is misspelled and the distance from the site to Pleasant Hill is probably meant to be 6.7 not 67 miles.

6. Section 1.3.1, Second Paragraph and Figure 1-1

It is difficult to locate the site from the description and location map provided. The map needs to be at a larger scale to show the specific site location. A reference to Figure 5-1, which provides the legal description, could have been included in Section 1.3.1 to facilitate locating the site.

7. Page 1-5, Section 1.3.1, Paragraph 3

The relief of the facility is stated to be less than 20 feet, but no unit is used. It can be assumed that 20 feet per mile was intended, but this assumption may be incorrect since a unit is not given.

8. Page 1-5, Section 1.3.3, Paragraph 1

The statement that the bedrock below the Nike KS-30 facility has been mapped as Middle or Upper Pennsylvanian in age is correct. However, they are incorrect in implying that the Pleasanton and Marmaton (incorrectly spelled Parmaton) Groups are the uppermost bedrock underlying the site. According to reference number 7 (attachment) and to geologic mapping on file at DGLS, the uppermost bedrock is composed of limestones of the Kansas City Group.

9. Page 1-5, Section 1.3.3, Paragraph 1

According to an old unauthorized Cass County Geology report on file at DGLS, the Ozark Uplift caused no notable disturbance to the underlying rock strata.

10. Page 1-5, Section 1.3.3, paragraph 2

The Soil Survey of Cass County, Missouri 1985 published by the Department of Agriculture, Soil Conservation Service does not list the Haig-Hartwell-Deepwater soil association category. According to the soil association map in the soil survey, the site is located in soils of the Macksburg-Sampsel-Greenton Association. Hartwell soils are not

listed in the index, the Hail soils are not mapped in the section where the site is located and only the Deepwater soil is mapped in this section. No reference is provided to indicate where the contractor obtained information on site soils.

11. Page 1-6, Section 1.3.3, Paragraph 2

I am not familiar with the term "consolidated soils". It is not clear why these soils are considered to be "consolidated" as opposed to other types of soils.

12. Page 1-6 Section 1.3.4, Paragraph 3

For your information, eight well log records are in the DGLS data base for the Township and Range in which the facility is located. Seven of the wells are in the Pleasanton, Marmaton or Cherokee Groups and produce very low yields. The eighth well shows the uppermost formation as the Kansas City group. Enclosed are copies (attachment) of these well log records for your use.

13. Page 2-2

This page indicates several limitations on the site investigation. Asbestos MAY be present at several locations, and an asbestos hazard is mentioned in connection with transite water pipe. This suggests that other asbestos may have been discarded somewhere in the area. Lead-based paint is likely present at many locations, but what do they plan to do when they conclude that a lead-painted building is "Addressed as an area of concern"? They speak of sample results not yet available after nearly a year. PCB results have to be dug out of the following pages, but appear not to be a problem. On 2-3 we read of the small arms firing range, a sewage outfall, and various VOC sites, but the results were not available by publication time. The sampling and data summaries should be provided.

14. Page 2-4, Section 2.1.3, Paragraph 1

Lead-based paint is misspelled as head-based paint.

15. Page 2-5, Section 2.2.1, Paragraph 1

We note that this facility did not have an NPDES permit for the discharge from the STP.

16. Page 2-6, Section 2.2.3, Paragraph 1

There is a discrepancy between the statement on this page where it says four tanks were excavated and on Page 2-6, where it is indicated that seven USTs were removed.

17. Page 2-7, Section 2.3, Paragraph 1

In the second sentence Russell Fendick's name is misspelled.

18. Page 2-10, Section 2.4.2

This describes a visual inspection of the adjacent property and concludes there was not a need for further investigation. We request that the Army determine whether the residents have private wells. With the limited hydrogeological data available, one-time testing of residential wells would be desirable. But apparently no one drinks local groundwater.

19. Page 3-1, Section 3.1, Paragraph 4

There is a probable typographical error in the third sentence. Quit should be spelled quick.

20. Page 2-10, Last Line

This mentions a National Guard maintenance shop which perhaps merits a closer look and sampling.

21. Section 3.1.1, Buildings S3004, 005, 006, and 007

These buildings were adjacent to tanks used for various kinds of oil storage. All tanks were removed in the winter of 1993. Soil sampling should be done in these areas where removal occurred to determine if there might have been oil leakage and/or oil migration over the years.

22a. Page 3-4, Section 3.1.1, Bldg S3014, POL/Paint Storage Shed

This section states that the storage building for paint, oil, and paint-related solvents was not present at the time of the CERFA site visit. Were any soil samples taken at the location where the building used to stand?

22b. Page 3-4, Section 3.3.1, Small Arms Practice Range

The small arms practice range was used to fire small arms and rifles. Most of the bullets and spent ammunition were removed when the MONG vacated the facility but bullet fragments may remain. Soil sampling should be done in this area to determine the possibility of high lead concentrations. If lead sampling was done in this area, it should be indicated on an enclosed map and sampling results should accompany this document.

22c. Page 3-4, Section 3.1.1, Waste Oil Disposal Area

This section states that a grassy area is located 240 feet west of the Maintenance Shop. Waste oil was dumped in this area until 1975. a 20-foot black-stained square was observed. What measures have been taken to determine the extent of damage this dumping had on the Environment? Are there aquifers below the site? If so, has this waste oil migrated into the aquifers and contaminated the water? Are the residents on private drinking wells that draw water from these aquifers?

23. Page 3-5

In reviewing the Former Sewage Treatment Plant section, we took the effort to sample the drainage ditch along Highway KK. Apparently this was done last spring, but the results were unavailable at press time. Sampling of the sludge in the IMhoff tands and the soil at the associated discharge area is recommended.

24. Section 3.1.1, Former Sewage Treatment Plant, Paragraph 3

No information is provided identifying the final disposition of most of the construction/demolition materials debris pile.

25. Page 3-6

This page mentions 18 transformers. Details are scattered through this report, but it appears (page 4-10) that three were OK, one (page 4-5) leaked while otherwise, OK, and most were removed from the site. Did some contain PCBs and did any leak before removal? Where they stored at a staging area before disposal?

26. Page 4-3

This page speaks of an unidentified Building S3011 and says, "an unknown degree of hazard was identified for the building", the site should be further investigated. Was this a large, leaking dumpster? The fact that it is gone does not mean the site should not be investigated.

27. Page 4-3, Section 4.1, Vehicle Wash Area

It is stated previously that Building S3012 is not recommended for further investigation. Since the Vehicle Wash area is "associated" with Building S3012, does this mean that no further investigation is planned for the wash area?

28. Page 4-4, Section 4.1, Former STP

Has the sampling described in this paragraph been performed? What did the results show? If the results are available, they should be included in the document.

29. Page 4-4, Ninth Line from Bottom

This addresses supposedly non-friable asbestos.

30. Page 4-6, Twelfth Line from Bottom

A new technique was employed at a LUST site when they removed "20 cubic yards of soil". Replace "years with "yards".

31. Page 4-7, Lead Based Paint

What do they intend to do about the first four buildings? The other? What is an AREE? An acronym page would help. They seem to have verified the existence of a lead problem in buildings, but have not found out if there is a significant soil problem.

32. Page 4-5, Section 4.1, Asbestos Water Pipe

Asbestos may be present in the Imhoff tank sludge or in sediment below discharge outfall. Sampling may indicate present of asbestos from water pipes.

33. Page 4-8, Section 4.3.1, Contamination Pathways from Off-site, Paragraph 1

This section states that topographic and hydrological information regarding this facility is available in existing environmental documents. This information should accompany this document as a appendix. In addition, there is no reference to private drinking water wells used by residents in the vicinity. Was a door-to-door survey conducted? Was the local public water company consulted to ascertain this information?

34a. Page 4-8, Section 4.3.1, Contamination Pathways from Off-site, Paragraph 2

This paragraph states that no major drainages flow onto the installation and properties to the north, south, and west of the site are not anticipated to contribute any significant on-site surface waterflow. Is there any evidence to suggest that some drainage can occur from the site onto other properties such as properties to the north, south, and west? Was inclement weather anticipated to be a possible contributor of any significant on-site surface waterflow?

34b. Page 4-8, Section 4.3.1, Paragraph 3

Residential properties appear to be located east not west separated from the facility's drainage system by Highway KK and associated drainage culverts.

35. Page 4-9, Section 4.4.1, Asbestos

This section states that certain buildings were tested for ACMs. These tests indicate the presence of asbestos in pipe and hot water insulation and floor tile and that ACM is present from transite pipe disposed in a debris pile. The results from this test should accompany this document. Also, is the ACM accessible to trespassers? What immediate clean-up measures will be taken to remove the possibility of human exposure to this carcinogenic material?

36. Page 4-9, Section 4.4.2, Lead Based Paint and Lead Solder, Paragraph 2

This paragraph discusses buildings that were assumed to contain lead based paint and buildings where the presence of lead based paint was confirmed. What type of testing was performed to confirm the presence of lead based paint?

37. Page 4-9, Section 4.4.3, PCB, Paragraph 3

This paragraph states that three of the Army-owned transformers, one of which contained PCBs were temporarily stored in the Maintenance Shop. During the CERFA visit, there was no visual evidence of PCB releases. Was environmental sampling conducted at the site where the transformers were located before disconnection? How was the contaminated transformer store? Was it sitting on the floor or was some type of protective covering used? If a cover was used, how was it disposed?

38a. Page 4-11, Section 4.5, Remediation Efforts

This section states that remediation efforts include tank removal, transformer removal, and general facility closure actions. Contaminated soil associated with seven USTs has also been removed. Has there been or are there plans to resample the soil in these areas? What specific chemicals were in these USTs and what maximum contaminant levels are trying to be achieved by this soil removal?

38b. Page 4-11, Section 4.417, paragraph 2

The fifth sentence is incomplete, or the word "have" was inadvertently left out.

39. Pages 1, 2, and 3, Areas 1P, 3P, 5P, 6P and 8P, Table 5.1

These are categorized as CERFA Parcels. From the information available to the MDCH, these parcels appear to

be uncontaminated. Although uncontaminated, these areas are adjacent to contaminated parcels and therefore should be deed restricted from residential use. In addition, efforts should be made to prohibit adult and adolescent trespassers from entering this abandoned site until remediation to permit unrestricted use is complete.

40. Figure 5.1, Environmental Concerns Identified in CERFA Report Nike Battery Kansas City 30, Enclosure

This figure defines the parcels of this site and show where contamination was found. The residents in this area are not identified on this or any other map in this document. Inclusion of this type of information is necessary to determine possible health-related environmental concerns regarding Nike Battery.

41. Figure 5.1, Environmental Concerns Identified in CERFA Report Nike Battery Kansas City 30, Enclosure

This figure does not identify specific locations where environmental sampling was done. This information would be helpful in determining if soil and/or water sampling adequately represented the entire site.

42. Since this is a public document, it should be explained what the Nike Battery facility is and what specific activities took place at this site. This may help the public better understand the document.

43. This report repeatedly states that sampling had been done for various chemicals (lead, asbestos, etc.). The results from this sampling should be included in this report. In addition, it should also be stated what quality assurance/quality control, detection levels, and maximum concentrations were used to determine whether or not a problem existed in these parcels.

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES

DEPARTMENT OF GEOLOGY AND LAND SURVEY
P.O. BOX 137, JEFFERSON, MISSOURI 64101-0137
(314) 763-2139

314-368-2139

July 19, 1993

Mr. Mel Stanford
Department of the Army, Corps of Engineers
700 Federal Building, East 12th Street
Kansas City, Missouri 64106

Dear Mr. Stanford:

This is in response to your request for information on the mineral resource potential of property in Cass County, Missouri. The property is described as 23 acres in the NE 1/4, Sec. 6, T 46N, R 29W.

The mineral commodity with the greatest economic potential in the area described above is limestone. The base of the Bethany Falls Limestone is present at 900 (+/-) feet elevation in the NE 1/4 of section 6 and the unit has a thickness of approximately 25 feet. This makes the top of the limestone from 35 to nearly 85 feet below the land surface and probably too deep for surface mining. The Bethany Falls is extensively mined by underground methods elsewhere in the Kansas City area and the same potential certainly exists at this site. The Bethany Falls Limestone is an important source of crushed stone in the Kansas City area and is suitable for most types of construction aggregate and cement manufacture.

Twenty three acres are insufficient for a major aggregate operation when total mineable reserves are considered. In addition, the acreage requirements for pit area, plant site, stockpile area, overburden storage area, and "standoff" requirements for land reclamation permitting are substantial. Though the 23 acres are underlain by a potentially commercial deposit of limestone, the tract has value for this purpose only with adjacent property.

The only other mineral commodities with some potential for occurrence in section 6, T 46N, R 29W are natural gas, petroleum, and coal. The Survey has no record of any drilling in the quarter section containing the 23 acres so there is little evidence for or against the presence of the three commodities on site. The nearest gas production along with some minor oil production came from three nearby fields; the Knorrpp field about three or four miles to the northwest and the Shawhan and Lone Jack fields about three miles to the north. According to Clair (1943) all three of these fields are depleted, and there is little possibility of future production because deeper tests failed to obtain any production. Productions in these fields came from channel sandstones

Mr. Mel Stanford
July 19, 1993
Page 2

developed in the lower Pennsylvanian section in areas of structural "highs."
There is no evidence available in our files suggesting structural developments in section 6.

There are undoubtedly coal seams present in the Pennsylvanian rock section of northeast Cass County. Preliminary data suggest the coals are deep, thin, and high in sulfur that essentially eliminates the economic potential for mining. It is possible the coal might have some potential for the production of coal bed methane. The possibilities for production are very speculative, and the small acreage would greatly influence the economic viability if there was potential.

In summary, the only known mineral resource available in the NE 1/4, Sec. 6, T 46N, R 29W is limestone and realistically the economic potential of this resource is limited by the small size of the tract.

If I can be of any further assistance, please call.

Sincerely,

GEOLOGY AND LAND SURVEY

AW Rueff

Ardel W. Rueff, Geologist
Geologic Mapping and Resources Section

sm

----- Header Data -----

Log # Owner:STOWELL JAMES St:MO Cnty:JOHNSON
 025776 Alias: SW SW SE TRS: S01 T46N R29W
 Lat.:38,49,21.914N
 Type well:Private Well Long.:94, 4,10.892W
 Type log: S Quad:38094A7 5/77
 Driller:W.R.CHISLER Date: /
 Driller Liscense #: Confidential:N Release Dt. /
 Logger:H.M.GROVES Date:12/1969

Elev.: 965 Elev.S Yield: 10 SWL:(a) H2O @:
 T.D.: 515 base: DrDwn: 0 SWL:(b)

Bedrock at: 20 Samples saved:N Int. cored: 0 to 0

Top Fm.:DRIFT

Bot Fm.:CHEROKEE GROUP

Problems:

Remarks:

More:CSG: 258'OF 5.5"

----- Construction Data -----

Log #:025776 Date Completed: /

CASING: Dpth: 265 Diam: 6.20 I/O:0 Sz. Hole: 6.20 Sz. Below: 0.00

0 0.00
 0 0.00
 0 0.00

GROUT:	Type	Rig	Methd	Dt Abnd	Plug Date	Top	Bottom
				/	/	0	0

PUMP:	Cap	Type	Set at	TDH	Scrn Typ	Size	Lgth	Slot
	0		0	0		0	0	0

Well Treat	Type Dev	Typ Compl	Perf. Interval	Tube Pres.	Oil	Gas
			Top: 0 Bot: 0			

Open Top:DRIFT
 Formations Bot:CHEROKEE GROUP
 Other data sources:
 Remarks:

----- Stratigraphy Data -----

Log #	Top	Base Name	--Lith--			-----Minerals-----					
			Pr	Sc	Mn	Pri	Oc	Sec	Oc	Mnr	Oc
025776	0	20 DRIFT	SH	SD	CH		0		0		0
	20	180 PLEASANTON GROUP	SH	LS	SS		0		0		0
	180	325 MARMATON GROUP	LS	SH	SS		0		0		0
	325	515 CHEROKEE GROUP	SH	LS	SD		0		0		0

Printed on 01/07/94 at 09:24:10.

----- Header Data -----

Log # Owner:MONTEYEZ St:MO Cnty:CASS
 025492 N2 SE SE TRS: S04 T46N R29W
 Alias: Lat.:
 Type well:Private Well Long.:
 Type log: S Quad:UNKNOWN
 Driller:W.R. CHISLER Date: / Confidential:N Release Dt. /
 Driller License #: Date:08/1969
 Logger:J. THACKER

Elev.: 887 Elev.S Yield: 0 SWL:(a) H2O @:
 T.D.: 120 base: DrDwn: 0 SWL:(b)

Bedrock at:9999 Samples saved:N Int. cored: 0 to 0

Top Fm.:RESIDUUM & TOP SOIL

Bot Fm.:MARMATON GROUP

Problems:

Remarks:

More:20' OF 5.5" CSG

----- Construction Data -----

Log #:025492 Date Completed: /

CASING: Dpth: 100 Diam: 6.20 I/O:0 Sz. Hole: 0.00 Sz. Below: 0.00

0 0.00
 0 0.00
 0 0.00

GROUT:	Type	Rig	Methd	Dt	Abnd	Plug	Date	Top	Bottom
				/		/		0	0

PUMP:	Cap	Type	Set at	TDH	Scrn	Typ	Size	Lgth	Slot
	0		0	0			0	0	0

Well Treat	Type	Dev	Typ	Compl	Perf.	Interval	Tube	Pres.	Oil	Gas
					Top:	0 Bot: 0				

Open Top:RESIDUUM & TOP SOIL

Formations Bot:MARMATON GROUP

Other data sources:

Remarks:

----- Stratigraphy Data -----

Log #:025492

Top Base Name

0 45 RESIDUUM & TOP SOIL

45 120 MARMATON GROUP

--Lith-- -----Minerals-----

Pr	Sc	Mn	Pri	Oc	Sec	Oc	Mnr	Oc
CL	SD	SH		0		0		0
SH	LS	CL		0		0		0

Printed on 01/07/94 at 09:26:04.

----- Header Data -----

Log # Owner:ROOT S E St:MO Cnty:CASS
 016400 Alias: N2 NE NE TRS: S16 T46N R29W
 Lat.:
 Type well:Private Well Long.:
 Type log: S Quad:UNKNOWN-S-
 Driller:JOE CHISLER Date:07/1957 Confidential:N Release Dt. /
 Driller Liscense #: Date:08/1957
 Logger:R.D. KNIGHT

 Elev.: 897 Elev.S Yield: 0 SWL:(a) H2O @:
 T.D.: 145 base: DrDwn: 0 SWL:(b)

 Bedrock at:9999 Samples saved:N Int. cored: 0 to 0
 Top Fm.:PLEASANTON GROUP
 Bot Fm.:MARMATON GROUP
 Problems:
 Remarks:

----- Stratigraphy Data -----

Log #	Base Name	--Lith--	-----Minerals-----				
		Pr Sc Mn Pri	Oc	Sec	Oc	Mnr	Oc
0	100 PLEASANTON GROUP	SH SS		0		0	0
00	145 MARMATON GROUP	LS SH		0		0	0

Printed on 01/07/94 at 09:27:05.

----- Header Data -----

Log # Owner:COX B D St:MO Cnty:CASS
 022205 Alias: SW NE NE TRS: S31 T46N R29W
 Type well:Private Well Lat.:38,36,42.553N
 Type log: S Long.:90,39,28.962W
 Driller:W.R. CHISLER Date:08/1963 Quad:380908
 Driller License #: Confidential:N Release Dt. /
 Logger:J. WELLS Date:02/1964

Elev.: 842 Elev.S Yield: 1 SWL:(a) H2O @:
 T.D.: 335 base: DrDwn: 0 SWL:(b)

Bedrock at: 20 Samples saved:Y Int. cored: 0 to 0

Top Fm.:RESIDUUM & TOP SOIL

Bot Fm.:CHEROKEE GROUP

Problems:

Remarks:

More:295' OF 4 7/8"CSG

----- Construction Data -----

Log #:022205 Date Completed:08/1963

CASING: Dpth: 33 Diam: 6.20 I/O:0 Sz. Hole: 0.00 Sz. Below: 6.20
 0 0.00
 0 0.00
 0 0.00

GROUT:	Type	Rig	Methd	Dt	Abnd	Plug	Date	Top	Bottom
								0	0

PUMP:	Cap	Type	Set at	TDH	Scrn	Typ	Size	Lgth	Slot
	0		0	0			0	0	0

Well Treat	Type	Dev	Typ	Compl	Perf.	Interval	Tube	Pres.	Oil	Gas
					Top:	0 Bot:	0			

Open Top:RESIDUUM & TOP SOIL

Formations Bot:CHEROKEE GROUP

Other data sources:

Remarks:

----- Stratigraphy Data -----

Log #:022205

Top	Base	Name
0	20	RESIDUUM & TOP SOIL
20	155	MARMATON GROUP
155	335	CHEROKEE GROUP

--Lith--				-----Minerals-----				
Pr	Sc	Mn	Pri	Oc	Sec	Oc	Mnr	Oc
CL				0		0		0
LS	CL	SH		0		0		0
CL	SD			0		0		0

Printed on 01/07/94 at 09:28:51.

----- Header Data -----

Log # 013238 Owner: CLARK ED E St: MO Cnty: CASS
 Alias: S2 SW SE TRS: S33 T46N R29W
 Type well: Private Well Lat.:
 Type log: S Long.:
 Driller: JOE CHISLER & SON Date: 08/1954 Quad: UNKNOWN East 211115
 Driller License #: Confidential: N Release Dt. /
 Logger: R.D. KNIGHT Date: 10/1954

Elev.: 880 Elev.S Yield: 0 SWL:(a) H2O @:
 T.D.: 535 base: DrDwn: 0 SWL:(b)

Bedrock at: 60 Samples saved: Y Int. cored: 0 to 0
 Top Fm.: MARMATON GROUP
 Bot Fm.: CHEROKEE GROUP
 Problems:
 Remarks:

----- Stratigraphy Data -----

Log #	Base Name	--Lith--		-----Minerals-----						
		Pr	Sc	Mn	Pri	Oc	Sec	Oc	Mnr	Oc
0	135 MARMATON GROUP	SH	LS			0		0		0
135	535 CHEROKEE GROUP	SH	SS			0		0		0

Printed on 01/07/94 at 09:29:43.

----- Header Data -----

Log # Owner: CLOUD JIM M St: MO Cnty: JOHNSON
 010150 Alias: SW SE SE TRS: S36 T46N R29W
 Lat.:
 Type well: Private Well Long.:
 Type log: S Quad: UNKNOWN *ringed*
 Driller: BOTEN BROS Date: 08/1947
 Driller License #: Confidential: N Release Dt. /
 Logger: MCNEAL Date: /

 Elev.: 907 Elev.S Yield: 0 SWL:(a) H2O @:
 T.D.: 43 base: DrDwn: 0 SWL:(b)

 Bedrock at: 9999 Samples saved: Y Int. cored: 0 to 0
 Top Fm.: PLEASANTON GROUP
 Bot Fm.: PLEASANTON GROUP
 Problems:
 Remarks:

----- Stratigraphy Data -----

Log #: 010150	--Lith--		-----Minerals-----				
Top Base Name	Pr	Sc Mn Pri	Oc	Sec	Oc	Mnr	Oc
0 43 PLEASANTON GROUP	SH	SS		0		0	0

Printed on 01/07/94 at 09:30:30.

FEB 24 '94 11:01

P.2

Header Data

Log # Owner:STANLEY MARLAND ST:ND Cnty:CASS
 010973 NE SE NE TRS: 901 T46N R30W
 Alias: Loc.:38,44,44.990N
 Type well:Private Well Long.:94, 7,53.525W
 Type log: S Quad:38094C7
 Driller:R.A. FOSTER Date:04/1960
 Driller License #: Confidential:N Release Dt. /
 Logger:K. ANDERSON Date:09/1960

Elev.: 947 Elev.S Yield: 0 SWL:(a) H2O St:
 I.O.: 200 bases Drawn: 0 SWL:(b)

Bedrock at: 35 Samples saved:Y Int. cored: 0 to 0
 Top fm.:RESIDUUM & TOP SOIL
 Bot fm.:MANKATON GROUP
 Problems:
 Remarks:
 More:D & A

Construction Data

Log #:010973 Date Completed:04/1960

CASING: Dpth:99999 Diam: 0.00 I/O:0 Sz. Hole: 0.00 Sz. Below: 0.00
 0 0.00
 0 0.00
 0 0.00

GROUT:	Type	Ref	Method	Dt Abnd	Plug Date	Top	Bottom
				/	/	0	0

PUMP:	Cap	Type	Set at	TCK	Sern Typ	Size	Lyth	Slot
	0		0	0		0	0	0

Well Test	Type Dev	Type Compl	Perf. Interval	Tube Pres.	Cil	Gas
			Top: 0 Bot: 0			

Open Top:RESIDUUM & TOP SOIL
 Formation: Bot:MANKATON GROUP
 Other data sources:
 Remarks:

Stratigraphy Data

Log #:	010973	--Lith-- -----Minerals-----								
Top	Base Name	Fr	Sc	Mn	Pri	Oc	Sec	Oc	Mnr	Oc
0	20 RESIDUUM & TOP SOIL	CL	SD			0		0		0
20	35 KANSAS CITY GROUP	LS	SL			0		0		0
35	145 PLEASANTON GROUP	CL	SH	SD		0		0		0
145	200 MANKATON GROUP	SH	LS			0		0		0

Printed on 02/18/94 at 08:03:54.

FEB 24 '94 11:02

P.3

..... Header Data

Log # 020855 Owner:TRUNDLE P 0 Site:HO Gray:JACKSON
 Alias: MW SW NW TBS: K31 167W R29W
 Type well:Private Well Lat.:38,50,40.340N
 Type logs: 1 Long.:94,10,24.007W
 Driller:MONTGOMERY BRGS Date:05/1962 Quad:300940N
 Driller License #: Confidential:9 Release Dt. /
 Logger:J. WELLS Date:05/1962

Level:1000 Elev.0 Yield: 30 SWL(ft) K20-B:
 "D.: 175 bms: Drums 0 SWL(ft)

Indrank at: 20 Samples saved:Y Int. corrd: 0 to 0

Top FM.:KANSAS CITY GROUP

Bot FM.:PLEASANTON GROUP

Problems:

Remarks:

Core:SEE LOG 11380 FOR CORRELATION

----- Stratigraphy Data -----

Log #:020855	..Lith--	-----Minerals-----
Top Bed Name	Pr Sc Mh Pri	On Sec On Mhr Oc
020-85 KANSAS CITY GROUP	LS SH	0 0 0
85 175 PLEASANTON GROUP	SH SD	0 0 0

Printed on 02/16/94 at 08:00:44.

Missouri Department of Natural Resources Comments
NIKE BATTERY - KANSAS CITY 30
February 20, 1994

GENERAL

1. One major factor to be evaluated when identifying parcels as CERFA (clean) for disposal purposes is how can the tract or tracts of land be broken or subdivided in order to dispose of the property if the entire property is not clean. At the NIKE BATTERY - KANSAS CITY 30 (NIKE) site the property owned by the federal government contains two separate tracts of property in the same vicinity which are connected by drainage, utility and road easements. On both tracts, the west parcel (approximately 15 acres) and the east parcel (approximately 5 acres) contamination has been identified previously in the soil and is suspected in the groundwater. On the west parcel, Army has proposed that approximately six acres of the 15 is identified as CERFA/clean; on the east parcel they propose approximately 2.5 acres of the 5 is CERFA/clean.

1. **Army Response:** Comment noted.

2. Based on the fact that approximately 60% of the entire area has been identified as contaminated or requires additional investigation by the ARMY, including groundwater, which extends under areas proposed as clean, we recommend that the entire facility for the ease of future disposal and efficient use of Government funds be designated as "CERFA Disqualified Parcels".

2. **Army Response:** The Army non-concurs with the requested change. CERFA required the Army to undertake a 7-step process to determine whether or not there was any evidence of contamination which would preclude a parcel from being designated as "uncontaminated." The Army believes that it has conducted the designation of "uncontaminated" parcels in accordance with this process. The Army does not believe it was Congress's intent to eliminate parcels which could be designated as "uncontaminated," based on supposition. In the absence of information to the contrary, the Army has not "disqualified" parcels from being designated as "uncontaminated." However, a review of the Nike KC-30 CERFA report indicates that a parcel which reportedly had waste oil dumped onto the ground is labelled as a disqualified parcel on Figure 5-1. In this particular case, previous site visits discovered the appearance of ground staining in the waste oil disposal area. For parcels in which no information could be found regarding a release, the Army does not intend to override the results of the CERFA investigation for the reasons stated above.

3. The authors provided clear information on the purpose of the document and summaries of the CERFA parcel designations. The document was however significantly lacking in descriptions regarding the history of the facility and the various activities of the missions operated there. As a public document it is very helpful to describe the purpose of the facility fully to clearly understand what activities took place, or may have taken place on-site. In addition, it also may clarify what activities did not take place as compared to other similar facilities.

3. Army Response: Concur. The discussion of the purpose of the facility will be enhanced and expanded.

4. The document fails to provide attachments or inclusions regarding all the data that has been collected to date to support any decision. MDNK requests that copies and summaries of recent and past sampling activities be provided.

4. Army Response: Some sampling information was not available at the time of the draft CERFA report preparation. Additional sampling information received since that time will be included. The Army feels it was not the intent of CERFA to include all documents. Public Law 102-426 required the Army to delineate that portion of Nike Kansas City-30 which was "uncontaminated." As such, extensive information about contamination was purposefully excluded from the CERFA reports prepared by the Army as this information is, in general, superfluous to the requirements of the CERFA law. However, the CERFA contractor has been instructed to include the data upon which the CERFA parcel designations were made in an appendix to the final report.

We have provided you copies of the enhanced PA and Sampling Design Plan in the past. Another copy can be supplied, if necessary.

SPECIFIC

5. Page 1-3, Section 1.3

There are two typographical errors. The town of Pleasant Hill is misspelled and the distance from the site to Pleasant Hill is probably meant to be 6.7 not 67 miles.

5. Army Response: Concur. The contractor has been made aware of this error and it will be changed appropriately.

6. Section 1.3.1, Second Paragraph and Figure 1-1

It is difficult to locate the site from the description and location map provided. The map needs to be at a larger scale to show the specific site location. A reference to Figure 5-1, which provides the legal description, could

have been included in Section 1.3.1 to facilitate locating the site.

6. **Army Response: Concur.** A reference to Figure 5-1 will be made and the contractor will research the possibility of a larger scale map.

7. Page 1-5, Section 1.3.1, Paragraph 3

The relief of the facility is stated to be less than 20 feet, but no unit is used. It can be assumed that 20 feet per mile was intended, but this assumption may be incorrect since a unit is not given.

7. **Army Response: Concur.** The contractor has been made aware of this error and it will be changed appropriately.

8. Page 1-5, Section 1.3.3, Paragraph 1

The statement that the bedrock below the Nike KS-30 facility has been mapped as Middle or Upper Pennsylvanian in age is correct. However, they are incorrect in implying that the Pleasanton and Marmaton (incorrectly spelled Parmaton) Groups are the uppermost bedrock underlying the site. According to reference number 7 (attachment) and to geologic mapping on file at DGLS, the uppermost bedrock is composed of limestones of the Kansas City Group.

8. **Army Response: Partially concur.** Based on the attached well logs of your comment letter, it appears that the uppermost group is not constant. Several of the well logs show Pleasanton and Marmaton as the uppermost groups. The contractor will rephrase to say that the Kansas City Group is sometimes the uppermost unit in the area, but the Pleasanton and Marmaton are also uppermost units at some locations in the region.

9. Page 1-5, Section 1.3.3, Paragraph 1

According to an old unauthorized Cass County Geology report on file at DGLS, the Ozark uplift caused no notable disturbance to the underlying rock strata.

9. **Army Response: Noted.** The contractor will review the appropriate documentation and make any necessary changes.

10. Page 1-6, Section 1.3.3, paragraph 2

The Soil Survey of Cass County, Missouri 1985 published by the Department of Agriculture, Soil Conservation Service does not list the Haig-Hartwell-Deepwater soil association category. According to the soil association map in the soil survey, the site is located in soils of the Macksburg-Sampsel-Greenton Association. Hartwell soils are not listed in the index, the Hail soils are not mapped in the

section where the site is located and only the Deepwater soil is mapped in this section. No reference is provided to indicate where the contractor obtained information on site soils.

10. **Army Response:** Concur. The contractor will revise the report per your comment.

11. Page 1-6, Section 1.3.3, Paragraph 2

I am not familiar with the term "consolidated soils". It is not clear why these soils are considered to be "consolidated" as opposed to other types of soils.

11. **Army Response:** Concur. The contractor will explain the term "consolidated" in the text.

12. Page 1-6 Section 1.3.4, Paragraph 3

For your information, eight well log records are in the DGLS data base for the Township and Range in which the facility is located. Seven of the wells are in the Pleasanton, Marmaton or Cherokee Groups and produce very low yields. The eighth well shows the uppermost formation as the Kansas City group. Enclosed are copies (attachment) of these well log records for your use.

12. **Army Response:** Noted. This information is noted and greatly appreciated. The CERFA report will be updated accordingly.

13. Page 2-2

This page indicates several limitations on the site investigation. Asbestos MAY be present at several locations, and an asbestos hazard is mentioned in connection with transite water pipe. This suggests that other asbestos may have been discarded somewhere in the area. Lead-based paint is likely present at many locations, but what do they plan to do when they conclude that a lead-painted building is "Addressed as an area of concern"? They speak of sample results not yet available after nearly a year. PCB results have to be dug out of the following pages, but appear not to be a problem. On 2-3 we read of the small arms firing range, a sewage outfall, and various VOC sites, but the results were not available by publication time. The sampling and data summaries should be provided.

13. **Army Response:** The Army sees 3 main issues in this question. First, the presence of ACM, as noted, does not indicate disposal. Most of the asbestos is contained in locked buildings. The only evidence of ACM disposal was the small piece of transite piping near the sewage treatment plant. Secondly,

lead based-paint (LBP) identification was made only with respect to how that LBP could have affected the designation of the parcel in accordance with CERFA. Parcels with LBP were designated CERFA parcels with qualifiers. The issue of sampling/remediation is not intended to be part of the CERFA report, but will be addressed as part future environmental restoration efforts by the Kansas City District.

As stated above in comment #4, Public Law 102-426 only required the Army to delineate that portion of Nike Kansas City-30 which was "uncontaminated." As such, extensive information about contamination was purposefully excluded from the CERFA reports prepared by the Army as this information is, in general, superfluous to the requirements of the CERFA law.

14. Page 2-4, Section 2.1.3, Paragraph 1

Lead-based paint is misspelled as head-based paint.

14. Army Response: Concur. This comment has been previously addressed.

15. Page 2-5, Section 2.2.1, Paragraph 1

We note that this facility did not have an NPDES permit for the discharge from the STP.

15. Army Response: This comment is noted.

16. Page 2-6, Section 2.2.3, Paragraph 2

There is a discrepancy between the statement on this page where it says four tanks were excavated and on Page 3-6, where it is indicated that seven USTs were removed.

16. Army Response: Concur. The sentence on page 2-6 was incorrect, it should read "seven" tanks.

17. Page 2-7, Section 2.3, Paragraph 1

In the second sentence Russell Fendick's name is misspelled.

17. Army Response: Concur. This mistake has been corrected.

18. Page 2-10, Section 2.4.2

This describes a visual inspection of the adjacent property and concludes there was not a need for further investigation. We request that the Army determine whether the residents have private wells. With the limited hydrogeological data available, one-time testing of residential wells would be desirable. But apparently no one drinks local groundwater.

18. **Army Response: Nonconcur.** This goes beyond the scope of the CERFA law. This issue can be addressed in future environmental restoration efforts.

19. Page 3-1, Section 3.1, Paragraph 4

There is a probable typographical error in the third sentence. Quit should be spelled quick.

19. **Army Response: Nonconcur.** "Quitclaim" is the correct word.

20. Page 2-10, Last Line

This mentions a National Guard maintenance shop which perhaps merits a closer look and sampling.

20. **Army Response:** The requested actions were not required in order to conduct the property identification require CERFA. This issue can be addressed in future environmental oration efforts.

21. Section 3.1.1, Buildings S3004, 005, 006, and 007

These buildings were adjacent to tanks used for various kinds of oil storage. All tanks were removed in the winter of 1993. Soil sampling should be done in these areas where removal occurred to determine if there might have been oil leakage and/or oil migration over the years.

21. **Army Response:** Sampling was performed as part of "clean closure" for all seven UST removals and state-approved "clean closure" was obtained for all seven removal sites.

22a. Page 3-4, Section 3.1.1 Bldg S3014, POL Paint Storage Shed

This section states that the storage building for paint, oil, and paint-related solvents was not present at the time of the CERFA site visit. Were any soil samples taken at the location where the building used to stand?

22a. **Army Response:** No samples have been taken. This building is located in a CERFA disqualified parcel. The requested actions were not required in order to conduct the property identification required by CERFA.

22b. Page 3-4, Section 3.3.1 Small Arms Practice Range

The small arms practice range was used to fire small arms and rifles. Most of the bullets and spent ammunition were removed when the MONG vacated the facility but bullet fragments may remain. Soil sampling should be done in this area to determine the possibility of high lead

concentrations. If lead sampling was done in this area, it should be indicated on an enclosed map and sampling results should accompany this document.

22b. **Army Response:** Soil sampling at this site is anticipated as part of future environmental restoration efforts. This small arms firing range is located in a CERFA disqualified parcel. The requested actions were not required in order to conduct the property identification required by CERFA.

22c. Page 3-4, Section 3.1.1, Waste Oil Disposal Area

This section states that a grassy area is located 240 feet west of the maintenance Shop. Waste oil was dumped in this area until 1975. a 20-foot black-stained square was observed. What measures have been taken to determine the extent of damage this dumping had on the Environment? Are there aquifers below the site? If so, has this waste oil migrated into the aquifers and contaminated the water? Are the residents on private drinking wells that draw water from these aquifers?

22c. **Army Response:** Sampling at this site is anticipated as part of future environmental restoration efforts. This waste oil disposal area is located in a CERFA disqualified parcel. The requested actions were not required in order to conduct the property identification required by CERFA.

23. Page 3-5

In reviewing the Former Sewage Treatment Plant section, we took the effort to sample the drainage ditch along Highway KK. Apparently this was done last spring, but the results were unavailable at press time. Sampling of the sludge in the Imhoff tanks and the soil at the associated discharge area is recommended.

23. **Army Response:** Sampling at this site is anticipated as part of future environmental restoration efforts. The requested actions were not required in order to conduct the property identification required by CERFA.

24. Section 3.1.1, Former Sewage Treatment Plant Paragraph 3

No information is provided identifying the final disposition of most of the construction/demolition materials debris pile.

24. **Army Response:** Kansas City District is in charge of future environmental restoration efforts. This issue will be addressed as part of those efforts. Some efforts may be initiated by fall 1994.

25. Page 3-6

This page mentions 18 transformers. Details are scattered through this report, but it appears (page 4-10) that three were OK, one (page 4-5) leaked while otherwise, OK, and most were removed from the site. Did some contain PCBs and did any leak before removal? Where they stored at a staging area before disposal?

25. Army Response: The three transformers still at the site are owned by Missouri Public Service electric company and are PCB-free. Fifteen transformers were removed from service. Two of these transformers were PCB-contaminated and were stored briefly in a drip pan in the Maintenance Building, until they were shipped to a treatment facility. There were no signs of leakage, so no samples were deemed necessary. The remaining thirteen transformers were taken to Fort Leavenworth DDMO for disposal without being stored on site. Section 4.2.2 will be enhanced to provide more information on transformers and the section will be referenced on page 3-6.

26. Page 4-3

This page speaks of an unidentified Building S3011 and says, "an unknown degree of hazard was identified for the building", the site should be further investigated. Was this a large, leaking dumpster? The fact that it is gone does not mean the site should not be investigated.

26. Army Response: Building S3011 no longer exists. Visual inspection during the CERFA site visit did not reveal any signs of contamination. Please note this building is within a disqualified CERFA parcel. Sampling at this site is anticipated as part of future environmental restoration efforts. The requested actions were not required in order to conduct the property identification required by CERFA.

27. Page 4-3, Section 4.1, Vehicle Wash Area

It is stated previously that Building S3012 is not recommended for further investigation. Since the Vehicle Wash area is "associated" with Building S3012, does this mean that no further investigation is planned for the wash area?

27. Army Response: No, as discussed on page 2-8, section 2.2.4, of the Sampling Design Plan (July 1990), future sampling is anticipated as part of future environmental restoration efforts. The requested actions were not required in order to conduct the property identification required by CERFA.

28. Page 4-4, Section 4.1, Former STP

Has the sampling described in this paragraph been performed? What did the results show? If the results are available, they should be included in the document.

28. Army Response: No, the sampling discussed in the Sampling Design Plan (July 1990) has not been performed. Sampling at this site is anticipated as part of future environmental restoration efforts. The requested actions were not required in order to conduct the property identification required by CERFA.

29. Page 4-4, Ninth Line from Bottom

This addresses supposedly non-friable asbestos.

29. Army Response: Yes, this discusses non-friable asbestos. As stated on line eight and nine of page 4-4.

30. Page 4-6, Twelfth Line from Bottom

A new technique was employed at a LUST site when they removed "20 cubic yards of soil". Replace "years with "yards"

30. Army Response: Concur. This comment has already been provided to the contractor for correction.

31. Page 4-7, Lead Based Paint

What do they intend to do about the first four buildings? The other? What is an AREE? An acronym page would help. They seem to have verified the existence of a lead problem in buildings, but have not found out if there is a significant soil problem.

31. Army Response: As part of future environmental restoration actions, friable asbestos will either be removed from the buildings or the buildings will be demolished and the debris taken to an appropriate landfill. AREE stands for Area Requiring Environmental Evaluation (page 2-4, third line from the top). An acronym list will be added to make the document more user friendly. According to Mr. Wilms, Fort Leavenworth, the exterior paint has been in good condition, therefore, lead in soil should not be an issue. Lead paint has been confirmed on the inside of the buildings and is peeling in some areas. These issues can be addressed in more detail as part of future environmental restoration efforts.

32. Page 4-5, Section 4.1, Asbestos Water Pipe

Asbestos may be present in the Imhoff tank sludge or in sediment below discharge outfall. Sampling may indicate present of asbestos from water pipes.

32. **Army Response:** Sampling at this site is anticipated as part of future environmental restoration efforts. The requested actions were not required in order to conduct the property identification required by CERFA.

33. Page 4-8, Section 4.3.1, Contamination Pathways from Off-site, Paragraph 1

This section states that topographic and hydrological information regarding this facility is available in existing environmental documents. This information should accompany this document as a appendix. In addition, there is no reference to private drinking water wells used by residents in the vicinity. Was a door-to-door survey conducted? Was the local public water company consulted to ascertain this information?

33. **Army response:** Neither a door-to-door survey nor consultation with the local water company were performed. As stated on page 2-10, section 2.4.2, a database search was conducted within a 2.5-mile radius of the facility and did not identify any environmentally significant operations (such as, hazardous waste generators, USTs, or leaking USTs). Therefore, no additional investigations of adjacent properties were undertaken.

34a. Page 4-8, Section 4.3.1, Contamination Pathways from Off-site, Paragraph 2

This paragraph states that no major drainages flow onto the installation and properties to the north, south, and west of the site are not anticipated to contribute any significant on-site surface waterflow. Is there any evidence to suggest that some drainage can occur from the site onto other properties such as properties to the north, south, and west? Was inclement weather anticipated to be a possible contributor of any significant on-site surface waterflow.

34a. **Army Response:** Based on the site visit and the topography of the site (relatively flat), the most likely drainage appeared to be to the north. No research was conducted into rainfall intensities, but it appears that during heavy rainfall there would be runoff to the north.

34b. Page 4-8, Section 4.3.1, Paragraph 2

Residential properties appear to be located east not west separated from the facility's drainage system by Highway KK and associated drainage culverts.

34b. **Army Response:** The Army concurs, this will be corrected.

35. Page 4-9, Section 4.4.1, Asbestos

This section states that certain buildings were tested for ACMs. These tests indicate the presence of asbestos in pipe and hot water insulation and floor tile and that ACM is present from transite pipe disposed in a debris pile. The results from this test should accompany this document. Also, is the ACM accessible to trespassers? What immediate clean-up measures will be taken to remove the possibility of human exposure to this carcinogenic material?

35. Army Response: The Army does not feel that it is a requirement of CERFA to include specific test results in all cases. The CERFA report is not intended to re-present all past data. The material was determined to be asbestos containing and needs to be addressed.

The ACM is accessible if a trespasser breaks through or climbs over the fence, or breaks into the buildings. The Kansas City District is working on a contract to remove the material (estimated for the fall of 1994).

36. Page 4-9, Section 4.4.2, Lead Based Paint and Lead solder Paragraph 2

This paragraph discusses buildings that were assumed to contain lead based paint and buildings where the presence of lead based paint was confirmed. What type of testing was performed to confirm the presence of lead based paint?

36. Army Response: The contractor will check with Fort Leavenworth personnel to determine the lead paint testing methodology. The Army believes it is unnecessary to include all the sampling results, as discussed in comment response #35 above.

37. Page 4-9, Section 4.4.3, PCB Paragraph 3

This paragraph states that three of the army-owned transformers, one of which contained PCBS were temporarily stored in the Maintenance Shop. During the CERFA visit, there was no visual evidence of PCB releases. Was environmental sampling conducted at the site where the transformers were located before disconnection? How was the contaminated transformer store? Was it sitting on the floor or was some type of protective covering used? If a cover was used, how was it disposed?

37. Army Response: The transformers were stored in drip pans with no cover. No sampling was performed because there were no signs of leakage.

38a. Page 4-11, Section 4.5, Remediation Efforts

This section states that remediation efforts include tank removal, transformer removal, and general facility closure actions. Contaminated soil associated with seven USTs has also been removed. Has there been or are there plans to resample the soil in these areas? What specific chemicals were in these USTs and what maximum contaminant levels are trying to be achieved by this soil removal?

38a. **Army Response:** According to Mr. Wilms, Fort Leavenworth, the Army received "clean closure" of all the UST sites, although some contamination is still in place under a building that was adjacent to a UST (this was allowed by MDNR and "clean closure" was still obtained). If buildings are demolished as part of future environmental restoration activities, this soil will be removed at that time. The CERFA contractor will contact Fort Leavenworth personnel to determine if more detailed information can be obtained and included in this section of the text. These removal areas are located in CERFA disqualified parcels.

38b. Page 4-11, Section 4.417, paragraph 2

The fifth sentence is incomplete, or the word "have" was inadvertently left out.

38b. **Army Response:** Concur, this mistake was previously identified to the CERFA contractor.

39. Pages 1, 2, and 3, Areas 1P, 3P, 5P, 6P and 8P, Table 5.1

These are categorized as CERFA Parcels. From the information available to the MDOH, these parcels appear to be uncontaminated. Although uncontaminated, these areas are adjacent to contaminated parcels and therefore should be deed restricted from residential use. In addition, efforts should be made to prohibit adult and adolescent trespassers from entering this abandoned site until remediation to permit unrestricted use is complete.

39. **Army Response:** The necessity for deed restrictions will be reviewed when a buyer is determined. The Army feels the fencing and locked gates is a sufficient deterrent at this time.

40. Figure 5.1, Environmental Concerns Identified in CERFA Report Nike Battery Kansas City 30, Enclosure

This figure defines the parcels of this site and show where contamination was found. The residents in this area are not identified on this or any other map in this document. Inclusion of this type of information is necessary to determine possible health-related environmental concerns regarding Nike Battery.

40. **Army Response:** In accordance with CERFA, the Army evaluated adjacent (non-Army) property in completing this report. Adjacent property was not shown on the map for liability reasons. The Army must exercise caution when depicting adjacent property and environmental concerns which may threaten Army property. In general, the Army has chosen to limit the areal extent of maps included in the CERFA reports to installation BRAC boundaries. Where off-post contamination affected Army property, this information is included in the report. No evidence of Army contamination affecting off-post property was indicated.

41. Figure 5.1, Environmental Concerns Identified in CERFA Report Nike Battery Kansas City 30, Enclosure

This figure does not identify specific locations where environmental sampling was done. This information would be helpful in determining if soil and/or water sampling adequately represented the entire site.

41. **Army Response:** While there is no requirement in CERFA to explicitly depict areas of contamination, the Army agrees the information will make the reports more useful and will instruct the contractor to include this information to the extent possible. An exception regarding depiction of contamination occurs in those cases where the contamination threatens "uncontaminated" parcels. In these cases, the contamination is depicted.

42. Since this is a public document, it should be explained what the Nike Battery facility is and what specific activities took place at this site. This may help the public better understand the document.

42. **Army Response:** Concur, as stated in comment #3 above, the contractor has been instructed to enhance the discussion of the activities which took place at the site.

43. This report repeatedly states that sampling had been done for various chemicals (lead, asbestos, etc.) . The results from this sampling should be included in this report. In addition, it should also be stated what quality assurance/quality control, detection levels, and maximum concentrations were used to determine whether or not a problem existed in these parcels.

43. **Army Response:**

CERFA required the Army to undertake a 7-step process to determine whether or not there was any evidence of contamination which would preclude a parcel from being designated as "uncontaminated." The Army believes it has conducted the designation of "uncontaminated" parcels in accordance with this process. A description of the protocol used to address designation of parcels is as follows:

Based upon the results of the CERFA investigation, areas which did not contain hazardous substance storage (greater than 1 year), release, disposal, and/or areas which did not contain petroleum product/petroleum product derivative storage (greater than 1 year), release, or disposal, were indicated as CERFA parcels. Absent storage, release, or disposal, the presence of the following will not disqualify a parcel as being uncontaminated: asbestos contained within building materials; lead-based paint applied to building material surfaces; and PCBs, radionuclides or other substances contained within sealed products being used or capable of being used for their intended purpose. Additionally, the presence of naturally occurring substances, such as radon, in their natural form, or altered solely through naturally occurring processes or phenomena, from a location where they are naturally found, are not being considered releases which would disqualify a parcel as being uncontaminated.

Asbestos and lead paint were confirmed to be present and need to be addressed. As stated previously, the inclusion of all known sample data in the CERFA Report is beyond the scope of the law. Rather, the CERFA report is intended to be a summary of previous work. Accordingly, information regarding QA/QC, detection limits and MCLs is an inappropriate level of detail for this report.

A P P E N D I X D
DETAILED DATA BASE, NIKE BATTERY
KANSAS CITY

NIKE - KANSAS CITY 30 CERFA CATEGORY MATRIX

LOCATION	CERFA PARCEL WITH QUALIFIERS CATEGORIES					CERFA DISQUALIFIED CATEGORIES		
	ASBESTOS	LEAD	RADON	RADIO-NUCLIDES	UNEXPLODED ORDNANCE STORAGE	PCB ₂	PETROLEUM RELEASE	HAZARDOUS SUBSTANCE RELEASE
Former Waste Oil Disposal Area							Y	Y
Former Oil Storage Area							Y	Y
Former Small Arms Practice Range							Y	Y
Former Sewage Treatment Plant								
Construction/Demolition Debris	P						P	P
Former Sewage Treatment Plant							Y	Y
Outfall								
Building S3001					P			
Building S3002	P				P			
Building S3003	Y				Y		Y	P
Building S3004	Y				Y		Y	P
Building S3005	Y				Y		Y	Y
Building S3006	Y				Y		Y	Y
Building S3007	P				P		Y	
Building S3008	P				P		Y	
Building S3010	P				P			
Building S3012	P				P		Y	Y
Building S3013							Y	
Building S3014							Y	Y
Building S3015							P	P
Building S3028	P				P		Y	

STATUS=Y - SUBSTANCE PRESENT
STATUS=P - POSSIBLE SUBSTANCE PRESENT

Records printed: 20

ASBESTOS-CONTAINING MATERIAL

<u>LOCATION</u>	<u>STATUS</u>	<u>LOCATION COMMENTS</u>	<u>REMEDICATION OR MITIGATION</u>	<u>APPENDIX A REFERENCE(S)</u>
Construction/Demolition Debris	P			1,2
Building S3002	P			22b
Building S3003	Y			1,2,20
Building S3004	Y			1,2,20
Building S3005	Y			1,2,20
Building S3006	Y			1,2,20
Building S3007	P			22b
Building S3008	P			22b
Building S3010	P			22b
Building S3012	P			22b
Building S3028	P			22b

STATUS=Y - ASBESTOS CONTAINING MATERIAL PRESENT

STATUS=P- POSSIBLE ASBESTOS CONTAINING MATERIAL PRESENT

Records printed: 11

LEAD-BASED PAINT

<u>LOCATION</u>	<u>STATUS</u>	<u>LOCATION COMMENTS</u>	<u>YEAR BUILT</u>	<u>REMEDICATION OR MITIGATION</u>	<u>APPENDIX A REFERENCE(S)</u>
Building S3001	P		1958		1,2
Building S3002	P		1958		1,2
Building S3003	Y		1958		1,2,19
Building S3004	Y		1958		1,2,19
Building S3005	Y		1958		1,2,19
Building S3006	Y		1958		1,2,19
Building S3007	P		1958		1,2
Building S3008	P		1958		1,2
Building S3010	P		1970 (Est)		1,2
Building S3012	P		1970 (Est)		1,2
Building S3028	P		1970 (Est)		1,2

STATUS=Y - LEAD-BASED PAINT PRESENT

STATUS=P - POSSIBLE LEAD-BASED PAINT PRESENT

Records printed: 11

HAZARDOUS SUBSTANCE RELEASE

<u>LOCATION</u>	<u>STATUS</u>	<u>LOCATION</u> <u>COMMENTS</u>	<u>TYPE</u>	<u>SUBSTANCE</u>	<u>QUANTITY RELEASE</u> 1959-75	<u>DATE</u>	<u>APPENDIX A</u> <u>REFERENCE(S)</u>	<u>REMEDIALTION</u> <u>OR MITIGATION</u>
Former Waste Oil Disposal Area	Y	Former Waste Oil Disposal Area	Soil, Sediment	Waste oil & solvents		1959-75	1,2	Discontinued activities in area in 1975, during CERFA site visit staining no longer evident
Former Oil Storage Area	Y	Former Oil Storage Area	Soil	Waste oil & solvents		1975-88	1,2	Discontinued activities in area in 1988, during CERFA site visit staining no longer evident
Former Small Arms Practice Range	Y	Former Small Arms Practice Range	Soil	Lead		1959-88 (Est)	1,2,21,22b	Activities discontinued in 1988 (Estimated)
Former Sewage Treatment Plant	P	Former Sewage Treatment Plant	Sediment	Acids, solvents, oils, metals		1959-88	1,2	Discontinued outfall in 1988, possible source
Construction/Demolition Debris	Y	Construction/demolition debris disposal site	Soil	Asbestos			1,2,21,226	battery room in mezz hall Disposal area appeared smaller than reported in Enhanced Preliminary Assessment during CERFA visit
Former Sewage Treatment Plant Outfall	P	Former Sewage Treatment Plant Outfall	Sediment	Metals and Volatile Organic Compounds (VOCs)		1959-1988	1, 2	Discontinued Outfall in 1988
Building S3012	Y	Vehicle Wash & Direct Disposal	Surface, Soil	Waste oil & solvents		1963-68	1,2	Discontinued vehicle washing in 1968 and antifreeze, possible Petroleum/Oil/Lubricants disposal in 1975
Building S3012	P	Overfills/Leaks from Tank 6F	Soil	Lead, MOGAS		1/29/93	17,21,22b	Removed tank 1/93 200 CY contaminated soil excavated. Awaiting clean closure certification from Missouri

<u>LOCATION</u>	<u>STATUS</u>	<u>LOCATION</u>	<u>COMMENTS</u>	<u>TYPE</u>	<u>SUBSTANCE</u>	<u>DATE</u>	<u>APPENDIX A</u>	<u>REMEDIATION</u>
						<u>RELEASE</u>	<u>REFERENCES</u>	<u>OR MITIGATION</u>

STATUS=Y - SUBSTANCE PRESENT
 STATUS=P - POSSIBLE SUBSTANCE PRESENT

Records printed: 8

HAZARDOUS SUBSTANCE STORAGE

<u>LOCATION</u>	<u>STATUS</u>	<u>LOCATION COMMENTS</u>	<u>TYPE</u>	<u>SUBSTANCE</u>	<u>QUANTITY</u>	<u>DATE START</u>	<u>DATE INACTIVATED</u>	<u>APPENDIX A REFERENCES(S)</u>	<u>REMEDATION OR MITIGATION</u>
Former Oil Storage Area	Y	Former Oil Storage Area	Drum	Waste Oil & Solvents	< 165 Gallons	1975	1988	1,2	Discontinued activities in area in 1988
Former Oil Storage Area	Y	Tank 6H	AGT	Waste Oil	250 Gallons	1981	1988	1,2	Tank removed in 1988
Building S3003	P	Unidentified Material	Bucket	Unknown	5 Gallon	~1989		1	
Building S3005	P	Flammables Cabinet	Can	Various Hazardous Materials	< 30 Gallons (Est)	1959 (Est)	1968 (Est)	21	Cabinet is currently empty
Building S3006	Y	Battery Room Paint Lockers	Can	Various Paints & Paint Solvents	< 30 Gallons (Est)	1980 (Est)	1988 (Est)	2	Lockers removed
Building S3006	Y	Battery Room	Can	Battery Acid	< 12 Gallons	1963	1988	1,2	No longer in operation
Building S3008	Y	Former POL/Paint Locker (Location 1)	Can	Various Paints and Paint Solvents	< 30 Gallons (Est)	1969	1974	1,2	Locker emptied in 1974, mo to location 2 (S3015). Time of movement undetermined.
Building S3012	Y	Interior Haz Mat Storage Area(s)	Drum	Various Haz Mat (Solvents, Antifreeze, Etc)	Undetermined	1970	1988	1	Building vacated in 1988
Building S3012	Y	Outdoor Haz Mat/Waste Storage Area	Drum	Waste Oil & Solvents	Undetermined	1959	1975	2	Discontinued use of area in 1975
Building S3014	Y	Former POL/Paint Storage Shed	Can	Various Paints & Paint Solvents	< 30 Gallons (Est)	1970 (Est)	1980 (Est)	1,2	Shed vacated 1980 (Estimated), shed removed after 1990
Building S3015	P	Former POL/Paint Locker (Location 2)	Can	Various Paints & Paint Solvents	< 30 Gallons (Est)	Unknown	1974	1,2	Locker emptied in 1974, shed removed after 1990. Original located West side of Bldg 3008(Location 1). Possibly empty when at Location 2.

STATUS=Y - SUBSTANCE PRESENT
STATUS=P - POSSIBLE SUBSTANCE PRESENT

Records printed: 11

PETROLEUM RELEASE

<u>LOCATION</u>	<u>STATUS</u>	<u>LOCATION COMMENTS</u>	<u>TYPE</u>	<u>SUBSTANCE</u>	<u>QUANTITY</u>	<u>DATE RELEASE</u>	<u>APPENDIX A REFERENCE(S)</u>	<u>REMEDIALTION OR MITIGATION</u>
Former Waste Oil Disposal Area	Y	Former Waste Oil Disposal Area	Soil, Sediment	Oil		1959-1975	1,2	Discontinued activities in area in 1975, staining no longer evident during CERFA site Visit
Former Oil Storage Area	Y	Former Oil Storage Area	Soil	Oil		1975-1988	1,2	Discontinued activities in area in 1988, staining no longer evident during CERFA site Visit
Former Sewage Treatment Plant	P	Former Sewage Treatment Plant Outfall	Sediment	Total Petroleum Hydrocarbons		1959-1988	1,2	Discontinued in 1988, possible sources are drains from buildings
Former Sewage Treatment Plant Outfall	P	Former Sewage Treatment Plant Outfall	Sediment	Total Petroleum Hydrocarbons		1959-1988	1,2	Discontinued Outfall in 1988
Building S3002	Y	Air Compressor/Water Surface Pump Oil Leaks	Oil			10/25/93	21	Releases contained inside building
Building S3006	Y	Overfills/Leaks from Tank 6A	Soil	#2 Fuel Oil		1/29/93	17,21,22b	Removed UST approximately 1/93. 20 CY contaminated soil excavated, awaiting closure certification from Missouri
Building S3007	Y	Overfills/Leaks from Tank 6G	Soil	Diesel Oil		1/29/93	17,21,22b	Removed UST approximately 1/93. 20 CY contaminated soil excavated, awaiting closure certification from Missouri
Building S3012	Y	Overfills/Leaks from Tank 6F	Soil	MOGAS		1/29/93	17,21,22b	Removed UST approximately 1/93. 200 CY contaminated soil excavated, awaiting closure certification from Missouri

<u>LOCATION</u>	<u>STATUS</u>	<u>LOCATION</u> <u>COMMENTS</u>	<u>TYPE</u>	<u>SUBSTANCE</u>	<u>QUANTITY</u>	<u>DATE</u> <u>RELEASE</u>	<u>APPENDIX A</u> <u>REFERENCES</u>	<u>REMEDIALTION</u> <u>OR MITIGATION</u>
Building S3012	Y	Vehicle Wash & Direct Disposal	Surface, Soil	Oil, grease, antifreeze		1963-1968	1.2	Discontinued vehicle washing in 1968 and antifreeze, possible Petroleum/Oil/Lubricants disposal in 1975 Removed UST approximately 1/93. 20 CY contaminated soil excavated, awaiting closure certification from Missouri
Building S3028	Y	Overfills/Leaks from Tank 6E	Soil	#2 Fuel Oil		1/29/93	17,21,22b	

STATUS-Y - SUBSTANCE PRESENT
STATUS-P - POSSIBLE SUBSTANCE PRESENT

Records printed: 10

PETROLEUM STORAGE

<u>LOCATION</u>	<u>STATUS</u>	<u>LOCATION COMMENTS</u>	<u>TYPE</u>	<u>SUBSTANCE</u>	<u>QUANTITY</u>	<u>DATE INACTIVATED</u>	<u>APPENDIX A REFERENCES</u>	<u>REMEDATION OR MITIGATION</u>
Former Oil Storage Area	Y	Former Oil Storage Area	Drum	Various POL Products	< 165 Gallons	1988	1,2	Discontinued activities in area in 1988
Building S3003	Y	Tank	UST	#2 Fuel Oil	~1500 Gallons	1993	1	Removed approximately 1/93.
Building S3004	Y	Tank	UST	#2 Fuel Oil	1500 Gallons	1993	1	Removed approximately 1/93.
Building S3005	P	Flammables Cabinet	Can	Various POL Products	< 30 Gallons	1968 (Est)	21	Cabinet is currently empty
Building S3005	Y	Tank 6B	UST	#2 Fuel Oil	1500 Gallons	1968	1,2,13,16,	Removed approximately 1/93.
Building S3006	Y	Tank 6A	UST	#2 Fuel Oil	2500 Gallons	1968	1,2,13,16,	Removed approximately 1/93. 20 CY contaminated soil excavated
Building S3007	Y	Tank	UST	Diesel Oil	3000 Gallons	1968	1,2,13,16,	Removed approximately 1/93. 20 CY contaminated soil excavated
Building S3008	Y	Former POL/Paint Locker (Location 1)	Can	Various POL Products	< 30 Gallons	1974	1,2	Locker emptied 1974, moved to Location 2 (S3015). Time of movement undetermined.
Building S3012	Y	Tank 6F	UST	MOGAS	3000 Gallons	1988	1,2,13,16,	Removed approx 1/93
Building S3012	Y	Tank	AGT	Diesel Oil	1500 Gallons	1988	1,2	200 CY cont. soil excavated awaiting closure cert. from Mo
Building S3012	Y	Misc POL Storage	Drum	Various POL Products	Undetermined	1988	1	Removed 1988
Building S3013	Y	Former POL Storage Connex	Can	Various POL Products	< 30 Gallons	1988 (Est)	1,2	Building vacated in 1988
Building S3014	Y	Former POL/Paint Storage Shed	Can	Various POL Products	< 30 Gallons (Est)	1980 (Est)	1,2	Connex removed in 1988
								Shed vacated 1980 (Estimated), shed removed after 1990

LOCATION	STATUS	LOCATION COMMENTS	TYPE	SUBSTANCE	QUANTITY	INACTIVATED DATE	APPENDIX A REFERENCES	REMEDICATION OR MITIGATION
Building S3015	P	Former POL/Paint Locker (Location 2)	Can	Various POL Products	< 30 Gallons (Est)	1974	1,2	Locker emptied in 1974, shed removed after 1990. Original located West side of Bldg 3008(Loc 1). Possibly empty when at Location 2.
Building S3028	Y	Tank 6E	UST	#2 Fuel Oil	500 Gallons	1968	1,2,13,16,	Removed approximately 1/93. 20 CY contaminated soil excavated

STATUS-Y - SUBSTANCE PRESENT
STATUS-P - POSSIBLE SUBSTANCE PRESENT

Records printed: 15